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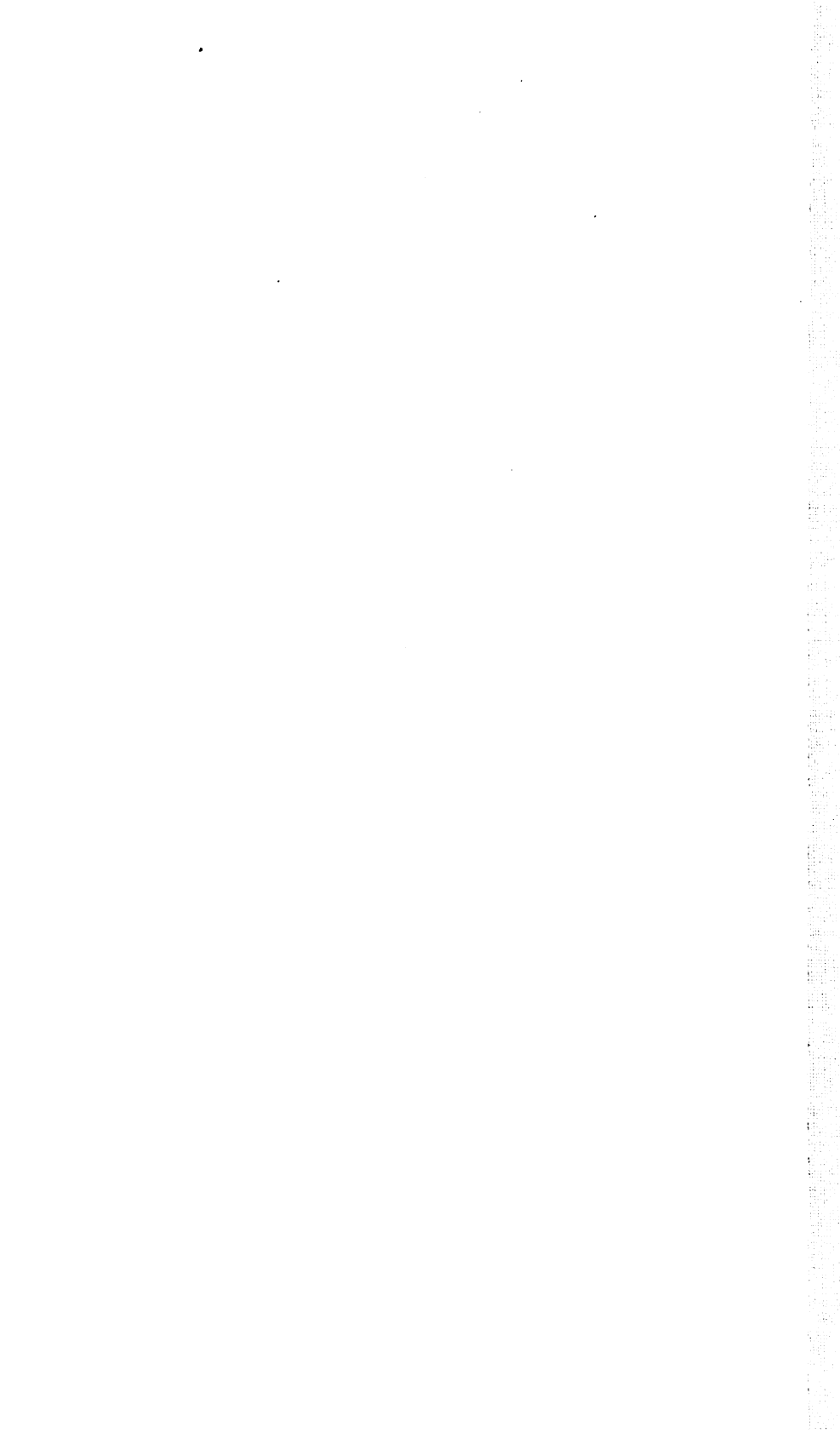
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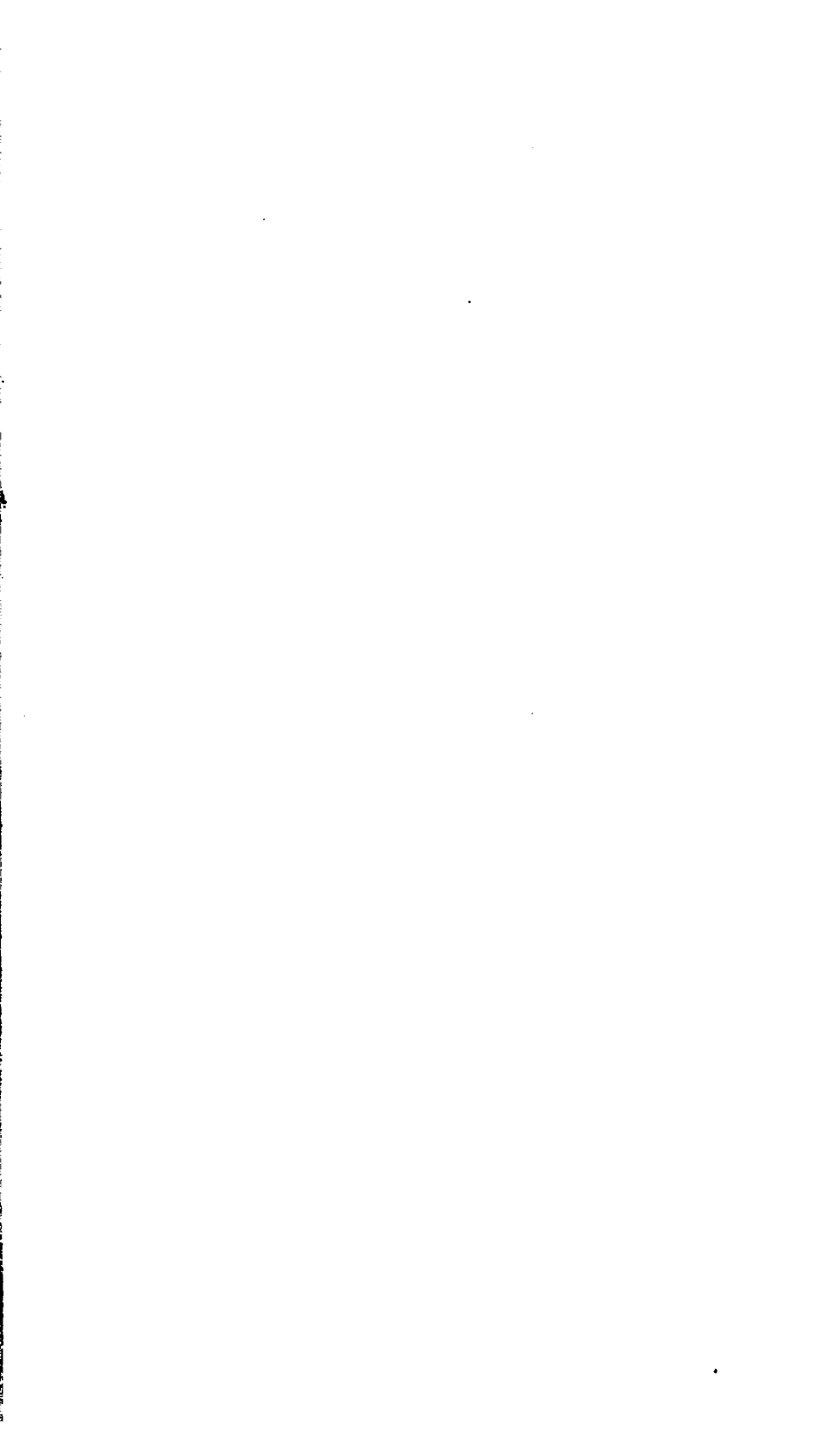
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Great Hall







THE
NAUTICAL ALMANAC
AND
ASTRONOMICAL EPHEMERIS
FOR THE YEAR
1842.

PUBLISHED BY ORDER OF
THE LORDS COMMISSIONERS OF THE ADMIRALTY.



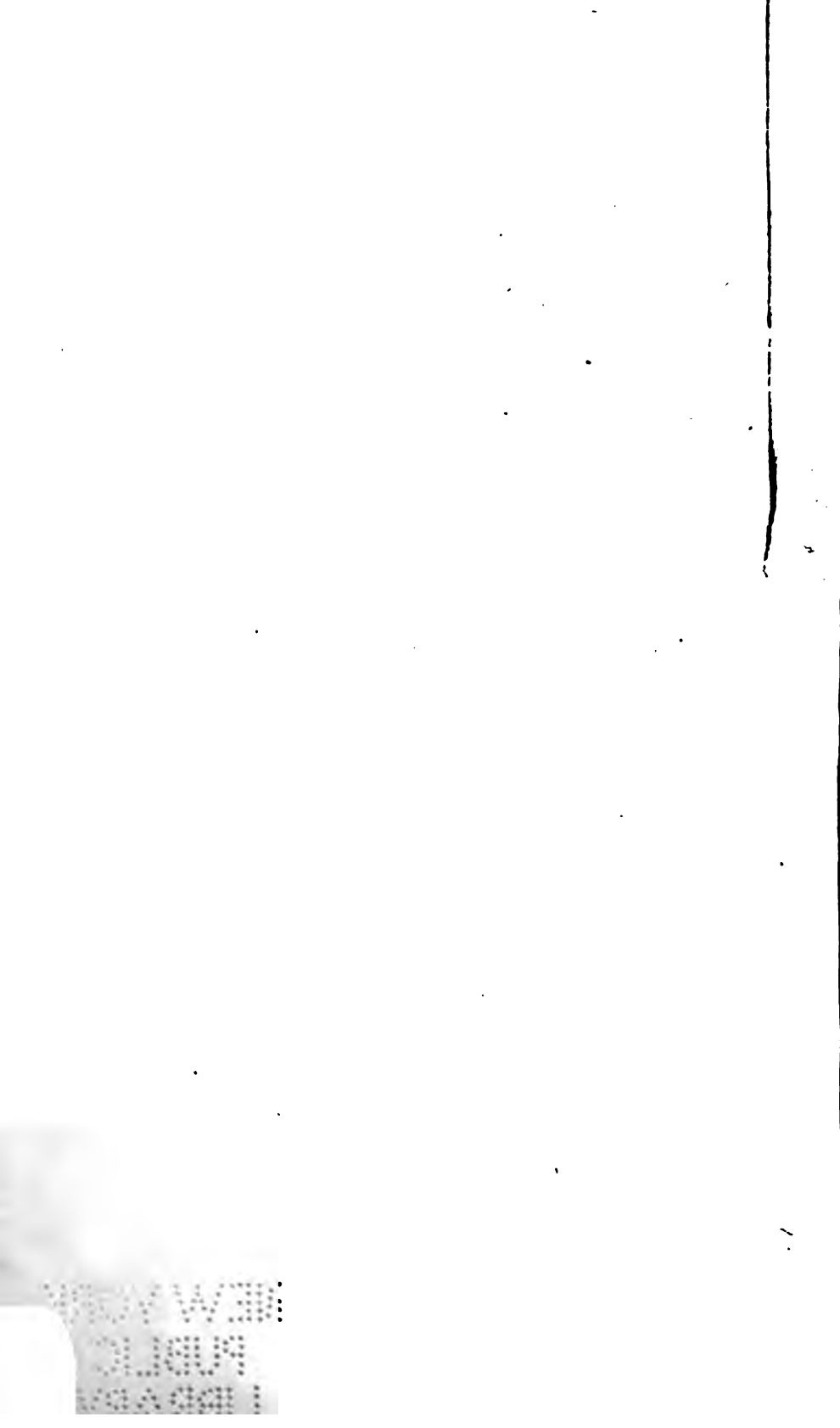
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CONTENTS,

ALPHABETICALLY ARRANGED.

* * *The large Roman Numerals indicate the Page of each Month;*
the small, the Page of the Preface; and the Arabic, the Page of the Book.

	Pages
Abbreviations and Symbols - - - - -	xiv
Calendar, Principal Articles of the - - - - -	xiii
Ceres, Ephemeris of - - - - -	355 to 357
_____ for Opposition - - - - -	358 to 359
Comet, Ephemeris of Encke's - - - - -	597 to 607
Configurations of the Satellites of Jupiter - - - - -	XIX
Day of the Year - - - - -	XXII
Eclipses of Jupiter's Satellites - - - - -	XX
_____ the Sun and Moon - - - - -	535 to 544
Encke's Comet, Ephemeris of - - - - -	597 to 607
Equation of Time - - - - -	I and II
_____ the Equinoctial Points - - - - -	266
Equinoctial Time - - - - -	XXII
Errata - - - - -	xv
Explanation of the Articles, &c. - - - - -	569 to 596
Festivals and Anniversaries - - - - -	xiii
Fraction of the Year - - - - -	XXII
Georgian, Ephemeris of the - - - - -	408 to 431
Juno, Ephemeris of - - - - -	345 to 347
_____ for Opposition - - - - -	348 to 349
Jupiter, Ephemeris of - - - - -	360 to 383
Jupiter's Satellites, Configurations of - - - - -	XIX
_____ Eclipses of - - - - -	XX
_____ Occultations, &c., of - - - - -	XXI
Law Terms and Returns - - - - -	xiv
Lunar Distances - - - - -	XIII to XVIII
_____ Correction for Second Difference of - - - - -	556
Mars, Ephemeris of - - - - -	5 to 339
_____ Phases of - - - - -	551
Mean Time of Transit of the first point of Aries - - - - -	XXII
Mercury, Ephemeris of - - - - -	291
Moon-Culminating Stars - - - - -	321
Moon, Ephemeris of the - - - - -	II
_____ Meridian Ephemeris of the - - - - -	I

	Pages
Moon, Phases of the, Apogee and Perigee - - - - -	XII
— Libration of the - - - - -	551
— Mean Longitude of Node of the - - - - -	266
— Eclipses of the - - - - -	535 to 544
Obliquity of the Ecliptic - - - - -	266
Observatories, Latitude and Longitude of the Principal - - - - -	564 to 568
Occultations of Stars by the Moon, visible at Greenwich - - - - -	522 to 524
— Elements for computing - - - - -	525 to 534
— of Jupiter's Satellites by Jupiter - - - - -	XXI
Pallas, Ephemeris of - - - - -	350 to 352
— for Opposition - - - - -	353 to 354
Phenomena - - - - -	535 to 549
Pole Star, Tables to find the Latitude by - - - - -	557 to 559
Stars, Mean Places of - - - - -	432 to 434
— Apparent Places of - - - - -	438 to 477
— Constants, for Reduction of - - - - -	436 to 437
— Logarithms of A, B, C, D, for Reduction of - - - - -	XXII
— Formulæ, for Reduction of - - - - -	435
— Correction of, for 2ζ - - - - -	478 to 479
Saturn, Ephemeris of - - - - -	384 to 407
— Ring of - - - - -	550
Sidereal Time at Mean Noon - - - - -	II
Sun, Ephemeris of the - - - - -	I to III
— Eclipses of the - - - - -	535 to 544
— Aberration of the - - - - -	266
— Parallax of the - - - - -	266
Terms, Law and University - - - - -	xiv
Tides - - - - -	552 to 555
Time Equivalents, Tables of - - - - -	560 to 563
Transits of Jupiter's Satellites and their Shadows - - - - -	XXI
University Terms - - - - -	xiv
Venus, Ephemeris of - - - - -	292 to 315
— Phases of - - - - -	551
Vesta, Ephemeris of - - - - -	340 to 342
— for Opposition - - - - -	343 to 344

P R E F A C E.

THE Contents of the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the year 1842 are the same generally as those of the preceding year.

THE Sun's Longitude from the Mean Equinox, the Latitude, and the Earth's Radius Vector have been deduced from the New Tables appended to *Effemeridi Astronomiche di Milano per l'Anno 1833*, (Milano, 1832), using a difference of Meridians = $36^m 45^s$.

The Perturbations of Longitude and Radius Vector produced by each of the Planets, Venus, Mars, Jupiter, and Saturn, have been computed accurately from the Tables for every 10th day of the year; the Sums then interpolated with second differences for every 5th day and thence the daily perturbations by simple proportion. The other parts of the calculations have been performed independently for every Mean Noon.

The Latitude of the Sun, depending on the attraction of the Moon, was computed for every day, and that part depending upon the Planets, Venus and Jupiter, was obtained for each tenth day and interpolated.

The Nutations of the Obliquity of the Ecliptic ($\Delta \omega$) and of Longitude (ΔL), have been derived from MS. Tables, constructed by Mr. James Epps, late Assistant Secretary of the Royal Astronomical Society, according to the following formulæ:

$$\Delta \omega = 9'' \cdot 2500 \cos \Omega - 0'' \cdot 0903 \cos 2 \Omega + 0'' \cdot 0900 \cos 2 \mathcal{D} + 0'' \cdot 5447 \cos 2 \odot$$

$$\Delta L = -17'' \cdot 2985 \sin \Omega + 0'' \cdot 2082 \sin 2 \Omega - 0'' \cdot 2074 \sin 2 \mathcal{D} - 1'' \cdot 2550 \sin 2 \odot$$

where Ω is the Mean Longitude of the Moon's ascending Node, \mathcal{D} the true Longitude of the Moon, and \odot the true Longitude of the Sun, (*Ast. Soc. Cat.*, pages xiv and xv); but the terms depending on $2 \mathcal{D}$ have been omitted.

The Mean Obliquity of the Ecliptic has been taken = $23^{\circ} 27' 35'' \cdot 61$, on January 1, 1842, and the Mean Annual diminution = $0'' \cdot 457$. (*BESSEL'S Tab. Reg.* page 9.)

The Sun's Right Ascension and Declination were computed independently for every Mean Noon.

The Semidiameter of the Sun, at the Earth's Mean Distance, has been taken = $16' 0'' \cdot 9$, as determined by BESSEL from 1698 transits, in which both limbs had been observed at Königsberg, between the Years 1820 and 1828, with REICHENBACH'S meridian circle. (*BESSEL'S Tab. Reg.* page L.)

The Equatorial Horizontal Parallax of the Sun, at the Earth's Mean Distance, has been taken = $8'' \cdot 5776$, as deduced by Professor ENCKE, from the Transits in 1761 and 1769. (*Der Venusdurchgang von 1769, &c.* Gotha, 1824)

The Constant of Aberration = $20'' \cdot 36$. (Preface to *Ast. Soc. Cat.* p. 1)

The Sidereal Time at Mean Noon = $\frac{\text{Sun's Mean Longitude}}{15}$

According to Professor BESSEL (*Tab. Reg.* page XXIV), the Mean Longitude of the Sun, at Paris Mean Noon of January 0^d of the year 1800 + *t*, is

$$279^{\circ} 54' 1'' \cdot 36 + t \cdot 27'' \cdot 605844 + t^2 \cdot 0'' \cdot 0001221805 - f \cdot 14' 47'' \cdot 083$$

where *f* denotes, for the 19th century, the number of years from the preceding bissextile year. Assuming the Meridian of Greenwich to be 9^m 21^s 5 West of that of Paris, and altering the epoch to the Mean Noon of January 1 of the year 1800 + *t*, the Sun's Mean Longitude (*M*) for the meridian of Greenwich is hence found equal to

$$280^{\circ} 53' 32'' \cdot 75 + t \cdot 27'' \cdot 605844 + t^2 \cdot 0'' \cdot 0001221805 - f \cdot 14' 47'' \cdot 083,$$

and we have, for the Mean Noon of any day (*n*) of the year 1800 + *t*,

$$\text{Sidereal Time} = \frac{M}{15} + n \cdot 3^m 56^s \cdot 555348 + \text{Nutation in R. A.}$$

The Longitude of the Moon from the *Mean Equinox*, the Latitude, Horizontal Parallax and Semidiameter have been derived from BURCKHARDT'S *Tables de la Lune* (Paris, 1812), using a difference of Meridians = 9^m 21^s: They have been computed independently and in duplicate for every Mean Noon and Midnight of the Year; and second differences have been taken into account wherever the irregular variation of the Equations rendered such a correction appreciable. The Longitude being then reduced to the True Equinox, each set of results has been differenced to the fourth order, compared and carefully examined. Wherever the progression of the fourth differences indicated a probable error of 0^m 7 or more, the original computations have been examined.

The Right Ascension and Declination have been computed for each noon and midnight, examined by means of differences to the fourth order, and interpolated for every hour. From these have been deduced the Right Ascension and Declination at Transit, on each day of the year.

The Lunar Distances from the Sun have been computed from Longitudes and Latitudes for each Noon and Midnight, examined by means of differences to the fourth order, and interpolated for every three hours. Those from the Planets and Stars have been computed from Right Ascensions and Declinations for every six hours, examined by means of differences to the second, third, and sometimes fourth order, according to the irregularity of their variation, and interpolated for every three hours. The Right Ascensions of the Stars have, however, been diminished by 0^s 2 in consequence of the alteration of the Equinox by POND, subsequently to the publication of Burckhardt's *Tables de la Lune*.

The Places of Mercury, Venus, and Mars, from the *Mean Equinox*, have been derived from LINDENAU'S *Tables**, assuming Greenwich to be 42^m 56^s West of

* *Investigatio nova Orbitæ a Mercurio circa Solem descriptæ, accedunt Tabulæ Planetæ ex Elementis recens repertis et Theoria Gravitatis Illust. De Laplace constructæ. Auctore BERNHARDO DE LINDENAU. Gothæ, 1813. 4to.*

Tabulæ Veneris novæ et correctæ ex Theoria Gravitatis clarissimi De Laplace et ex Observationibus recentissimis in specula Astronomica Seeburgensi habitis erutæ. Auctore BERNHARDO DE LINDENAU. Gothæ, 1810. 4to.

Tabulæ Martis novæ et correctæ ex Theoria Gravitatis clarissimi De Laplace et ex Observationibus recentissimis erutæ. Auctore BERNHARDO DE LINDENAU. Eisenberg, 1811. 4to.

Seeberg; and those of Jupiter, Saturn, and the Georgian, from BOUVARD's new Tables,* with a difference of meridians = $9^m 21^s.5$.

For Mercury, the Perturbations were obtained immediately from the Tables for each alternate Mean Noon and interpolated with first differences: the remainder of the calculations were performed independently for every Mean Noon.

For Venus, the Heliocentric Longitude from the *True Equinox*, Latitude and Radius Vector, were computed independently for Mean Noon of every eighth day, then interpolated with fourth differences for each day. The Geocentric places were computed for every fourth day, and the intermediate values obtained by interpolating with fourth differences.

For Mars, the Heliocentric Longitude from the *True Equinox*, Latitude and Radius Vector, were obtained independently for Mean Noon of every twelfth day, and interpolated with fourth differences for each day. The Geocentric places were computed for every fourth day, and interpolated with fourth differences.

For Jupiter, Saturn, and the Georgian, the Heliocentric Longitude from the *True Equinox*, Latitude and Radius Vector, were computed directly from the Tables for Mean Noon at intervals of thirty days; and interpolated, for each day, with second differences. The Geocentric places were obtained independently for every sixth day, and interpolated for every day, using differences to the fourth order.

For the Minor Planets, with the Elements of the Orbits of Vesta, Juno, Pallas, and Ceres given at page viii of the NAUTICAL ALMANAC for 1841, the Heliocentric Longitudes have been first computed and the periods of the next Oppositions ascertained approximately. The Oppositions in 1842 are those of Juno and Pallas only. For each of these Planets the Variations of the Elements, caused by Venus, the Earth, Mars, Jupiter, and Saturn, have been computed for intervals of twelve days, for the whole period between the Oppositions, agreeably to the method described in Professor AIRY's paper, "*On the Calculation of the Perturbations of the Small Planets and the Comets of short period.*"—(APPENDIX to NAUTICAL ALMANAC, 1837, page 149).

For the Perturbations, the following masses of the disturbing Planets have been used: viz.—

Venus	$\frac{1}{401211}$	(AIRY, <i>On the corrections in the Elements of Delambre's Solar Tables, &c.</i> — <i>Phil. Trans.</i> , 1828, page 30).
Earth	$\frac{1}{354936}$	(<i>Système du Monde</i> , 5th Edition, page 209).
Mars	$\frac{1}{2680337}$	(BURCKHARDT, <i>Conn. des Temps</i> , 1831, page 153).

* *Tables Astronomiques publiées par le Bureau des Longitudes de France, contenant les Tables de Jupiter, de Saturne et d'Uranus, construites d'après la Théorie de la Mécanique Céleste: par M. A. BOUVARD. Paris, 1821. 4to.*

Jupite $\frac{1}{1048.70}$ (AIRY, *Mem. Ast. Soc.*, vol. vi. page 97).

Saturn $\frac{1}{3512}$ (*Système du Monde*, 5th Edition, page 209).

The following are the resulting Elements:—

I. JUNO.

Epoch, 1842, May 29^o Mean Time at Greenwich.

Mean Longitude of †	ε	250° 50' 18".9	} From Mean Equinox of May 29, 1842.
Longitude of the Perihelion	ω	54 12 22.3	
Longitude of Ascending Node	ν	170 56 21.7	
Inclination of the Orbit	i	13 2 20.3	
Angle of Excentricity	φ	14 49 18.1	
Mean daily Sidereal Motion	n	813".76167	

8 1842, May 24, 13^h 30^m.9 Mean Time at Greenwich.

II. PALLAS.

Epoch, 1842, December 19^o Mean Time at Greenwich.

Mean Longitude of †	ε	99° 57' 21".8	} From Mean Equinox of Dec. 19, 1842.
Longitude of the Perihelion	ω	121 30 27.8	
Longitude of Ascending Node	ν	172 40 23.2	
Inclination of the Orbit	i	34 37 38.5	
Angle of Excentricity	φ	13 53 26.1	
Mean daily Sidereal Motion	n	768".52196	

8 1842, December 18, 10^h 48^m.3 Mean Time at Greenwich.

With these Elements and their Variations for intervals of twelve days preceding and following their respective Epochs, the Places of these Planets at Mean Noon for the month preceding and following their Oppositions were obtained.

The Approximate Ephemerides for the year, of Vesta and Ceres, were deduced from the Elements of 1841, and those of Juno and Pallas, from the Elements of 1841, to the Epochs of the new Elements respectively, after which the new Elements were used for the remainder of the year.

The Ephemeris of each of the Planets, Mercury, Venus, Mars, Jupiter, Saturn, and the Georgian, at the Time of Transit, has been computed for each day of the Year from their Places at Mean Noon. That of each of the Minor Planets, for one month preceding and following their respective Oppositions, from the accurate Noon Ephemeris.

The Semidiameters of the Planets, at the Mean Distance of the Earth from the Sun have been adopted as follow:

Mercury, Eq. Sem.	3".23	(Lindenau's <i>Tables of Mercury</i> , page 38)
Venus, Eq. Sem.	8".25	(Delambre's <i>Astronomy</i> , vol. ii. page 620)
Mars, Eq. Sem.	4".435	(Littrow's <i>Astronomy</i> , vol. ii. page 389)
Jupiter, Eq. Sem.	99".704	(<i>Mem. Ast. Soc.</i> , vol. iii. page 301)

Saturn, Eq. Sem. 81 ·106 (Ast. Nach. N^o 189)

Georgian, Eq. Sem. 37 ·25 (Delambre's *Astronomy*, vol. ii. page 620)

The Eclipses of Jupiter's Satellites have been computed, in duplicate, from "*Tables Écliptiques des Satellites de Jupiter, d'après la théorie de leurs attractions mutuelles et les constantes déduites des Observations.* Par le Baron Damoiseau. Publiées par le Bureau des Longitudes. Paris, 1836," using $9^m 21^s \cdot 5$ for the difference of meridians.

It has been the practice hitherto direct the attention of observers to those Eclipses only which happened when Jupiter was not less than 8° above the Horizon and the Sun 8° below. It appears, however, by a paper read before the Royal Astronomical Society on April 13, 1838, (*Ast. Soc. Notices*, vol. iv. p. 131,) that Mr. Riddle observed the Emersions of the First and Second Satellites at Greenwich on April 9, 1838, without difficulty, when the Sun was much less than 8° below the Horizon: a new limit has therefore been adopted for 1842, and will be continued in future years; and while the asterisk is still retained to indicate the Visibility agreeably to the old limits, a dagger is used to indicate that Jupiter is *above* the Horizon and the Sun *below*.

For the Configurations and Occultations of the Satellites, as well as the Transits of the Satellites and their Shadows over the disc of the Planet, Mr. WOOLHOUSE'S Tables in the APPENDIX to the NAUTICAL ALMANAC for 1835 have been used, with the exception of Table II. of each Satellite, which has been reconstructed to adapt it to Damoiseau's New Tables.

The Elements at page 550, for determining the appearance of Saturn's Ring, have been calculated by means of the corrected formulæ* at page viii of the NAUTICAL ALMANAC for 1836, adopting BESSLER'S later determinations of the values of Ω , i and a' , viz. :—

$$\left. \begin{aligned} \Omega &= 166^\circ 53' 8'' \cdot 9 + 46'' \cdot 462 (t - 1800) \\ i &= 28 10 44 \cdot 7 - 0 \cdot 350 (t - 1800) \\ a' &= 39'' \cdot 308 \end{aligned} \right\} \text{Ast. Nach., No. 274, col. 167.}$$

(Ast. Nach., No. 275, col. 170),

the mean distance of the Planet from the Sun being taken = $9 \cdot 54301$, agreeably to BOUVARD'S Tables of Saturn, instead of $9 \cdot 5421889$, the value used by BESSLER in the reduction of his observations.

The Mean Places of 91 of the 100 Principal Fixed Stars for Jan. 1, 1842, together with the Annual Variations, have been derived from the fundamental Catalogue for 1830, contained in the *Second Edition* of the NAUTICAL ALMANAC for 1834, pages 362 to 367, by means of the Formulæ at page xiv of the PREFACE to that Volume, and the corrections given at page x of the NAUTICAL ALMANAC for 1840.

To the Mean Places of the 91 Stars, derived also from the Fundamental Catalogue for 1830, the corrections have been applied, to satisfy the later Greenwich Observations.

* See Errata in the

1840, page xv.

PREFACE.

CORRECTIONS.

Star's Name.	R. A.	Dec.
α Arietis - - - - -	+0 '08	-2 '40
α Tauri - - - - -	+0 '08	-2 '15
β Geminorum - - - - -	-0 '03	-2 '36
α Leonis - - - - -	-0 '18	-2 '56
α Virginis - - - - -	-0 '01	-2 '66
α Scorpii - - - - -	-	+0 '09
α Aquilæ - - - - -	-0 '05	+1 '16
α Piscis Australis - - - -	+0 '04	-1 '31
α Pegasi - - - - -	-0 '04	-2 '84

The Logarithms of A, B, C, D, at page XXII. of each Month, have been computed agreeably to the Formulæ at page 435, omitting only in the Values of C and D, the terms $-0\cdot004 \sin 2\zeta$ and $-0\cdot090 \cos 2\zeta$; and for the only Stars that can be sensibly affected by the omission, viz. the five Polar Stars, a Table of Corrections is given at pages 478 and 479.

The Table of Constants at pages 436 and 437 for facilitating the Reduction of Stars *generally*, has been computed from BESSEL'S Formulæ, given at page 435, using the A, B, C, D, contained in this volume.

The apparent places of 95 of the principal Stars have been deduced from the Mean Places for January 1, 1842, using the Variables A, B, C, D in the present volume with new constants computed for the year 1840, instead of the constants in the Astronomical Society's Catalogue for 1830. For the five Polar Stars the constants have been computed for 1842 and 1843, and interpolated. The corrections were computed independently for every tenth day, with the exception of those for α and δ URSAE MINORIS, which were interpolated, with second differences, from computations made for every third day of the year.

A further correction of the right ascension for *daily* aberration is necessary, where extreme accuracy is required, and may be computed as follows: Let ϕ denote the latitude of the place, and δ the declination of the Star, then the correction (*in time*) for the *upper* transit is,

$$+0\cdot0206 \cos \phi \sec \delta$$

and for the *lower* transit,

$$-0\cdot0206 \cos \phi \sec \delta$$

The Lists of Moon-Culminating Stars and Occultations have been selected from Mr. FRANCIS BAILY'S Catalogue of Zodiacal Stars. (London, 1827.)

The Mean Places of the Stars for both Lists were taken in order of preference, 1. From the Catalogue of the 100 Stars in this Work. 2. From Mr. POND'S printed Catalogue of 1112 Stars. 3. From the Astronomical Society's Catalogue. The reduction of the Mean to the Apparent Places has been performed by means of the

Astronomical Society's Constants; the corrections for each star on the contiguous days being obtained by different computers for the Moon-Culminating List, and those for the Occultations by duplicate computations.

The calculations of the Elements of Occultations, the Occultations visible at Greenwich, and the Solar and Lunar Eclipses, have been made in the manner described by Mr. WOOLHOUSE in the Appendix to the NAUTICAL ALMANAC for 1836: those relating to the Occultations in duplicate.

The Tides at London Bridge for the year 1842 have been computed from MS. Tables founded upon Mr. LUBBOCK's principal Table III, given at page 401 of the *Philosophical Transactions* for 1831. This Table, as well as Table XV at page 412, which contains the corrections for each Month, has been entirely reconstructed, by adapting the equations for each month to their proper argument, *apparent time*, and eliminating from the latter the corrections due to the Moon's Parallax and Declination, by means of Mr. LUBBOCK's Tables XVII and XIX.

The Tables for finding the Latitude of a place by Observations of the Pole Star (α URÆ MINORIS), at any hour of the day, are similar to those published annually by Professor SCHUMACHER in his Ephemeris of the Planetary Distances, and are founded on the following formula:

$$l = a - p \cos h + \frac{1}{2} \sin 1'' (p \sin h)^2 \tan a$$

where l denotes the latitude

a — the true altitude of the Star

p — the apparent polar distance, expressed in seconds of arc

h — the hour angle of the Star = $S - \alpha$; S being the sidereal time of observation, and α the right ascension of the Star.

Table I contains the value of the *second* term ($p \cos h$) or the *first correction*; assuming, as *mean* values, $p = 91' 40''$, and $\alpha = 15^\circ 45'$.

Table II contains the value of the *third* term ($\frac{1}{2} \sin 1'' (p \sin h)^2 \tan a$) or the *second correction*, using the same *mean* quantities as in Table I.

Table III, which is *special* for the year 1842, and depends upon the difference between the true and assumed values of p and α , contains the *third* correction increased by $1'$ for the purpose of rendering the quantities additive.

A fourth term ($-\frac{1}{2} \sin^2 1'' (p \cos h) (p \sin h)^2$) is omitted, its greatest value being only $0'' \cdot 55$.

At the end of the volume will be found an Ephemeris of Encke's Comet from August 1, 1838, to June 1, 1839, derived from the following Elements:

1838, December 19th 0^h Berlin Mean Time.

Mean Anomaly	- - - - -	0° 0' 0''·59
Mean Daily Motion	- - - - -	1071''·18372
Longitude of the Perihelion	- - - - -	157° 27' 34''·8
Longitude of the Ascending Node	- - - - -	334 36 31 ·8
Inclination	- - - - -	13 21 29 ·0
Angle of Excentricity	- - - - -	0
Motion direct.		

PREFACE.

The Elements of the Orbit, together with an Ephemeris, for Berlin, extending from August 1, 1838 to January 1, 1839, were received from Professor ENCKE on May 21, 1838. The Ephemeris was reduced to the Meridian of Greenwich, and published by this Office in a separate form on June 9, 1838. The latter portion of the Ephemeris, viz., from January 1 to June 1, 1839, was computed at this Office from the same Elements, and published separately in August last. The Elements have been considered as constant for the whole period, and the calculations have been made for each alternate Midnight, commencing with that of January 1, and the results then interpolated for each intervening Midnight.

In the construction of the NAUTICAL ALMANAC generally, duplicate computations have been made where necessary, and independent calculations performed to guard against errors in principle, and all results finally examined by means of differences.

*Nautical Almanac Office,
Somerset House, London.
December 10, 1838.*

W. S. STRATFORD,
Superintendent of the Nautical Almanac.

PRINCIPAL ARTICLES OF THE CALENDAR,
For the Year 1842.

Golden Number - - - - 19	Dominical Letter - - - - B
Epact - - - - - 18	Roman Indiction - - - - 15
Solar Cycle - - - - - 3	Julian Period - - - - - 6555

FIXED AND MOVEABLE FESTIVALS, ANNIVERSARIES,
&c., &c.

Epiphany - - - - - Jan. 6	Pentecost—Whit Sunday - May 15
Septuagesima Sunday - - - - 23	Trinity Sunday - - - - - 22
Martyrdom of K. Charles I. - - - 30	Birth of Q. Victoria - - - - - 24
Quinquagesima—Shrove Sunday Feb. 6	Corpus Christi - - - - - 26
Ash Wednesday - - - - - 9	Restoration of K. Charles II. - - 29
Quadragesima—1st Sunday in Lent 13	Accession of Q. Victoria - - June 20
St. David - - - - - Mar. 1	Proclamation - - - - - 21
St. Patrick - - - - - 17	St. John Bapt.—Midsum. Day - - 24
Palm Sunday - - - - - 20	Birth of Dowager Q. Adelaide Aug. 13
Annunciation—Lady Day - - - 25	St. Michael—Michaelmas Day Sept. 29
Good Friday - - - - - 25	Gunpowder Plot - - - - - Nov. 5
EASTER SUNDAY - - - - - 27	1st Sunday in Advent - - - - - 27
Low Sunday - - - - - Apr. 3	St. Andrew - - - - - 30
St. George - - - - - 23	St. Thomas - - - - - Dec. 21
Rogation Sunday - - - - - May 1	Christmas Day - - - - - 25
Ascension Day—Holy Thursday- - 5	

The Year 5603 of the Jewish Era commences on September 5, 1842.

The Year 1258 of the Mohammedan Era commences on February 12, 1842.

Ramadân (Month of Abstinence) commences on October 6, 1842.

EXPLANATION OF ASTRONOMICAL SYMBOLS AND ABBREVIATIONS.

☉ The Sun.	♋ Conjunction.	♈ Aries. - - 0°
☾ The Moon.	☾ Quadrature.	I. ♉ Taurus. - 30
☿ Mercury.	♌ Opposition.	II. ♊ Gemini. - 60
♀ Venus.	♍ Ascending Node.	III. ♋ Cancer. - 90
♁ or ♂ The Earth.	♎ Descending Node.	IV. ♌ Leo. - - - 120
♂ Mars.	N. North. S. South.	V. ♍ Virgo. - - 150
♃ Vesta.	E. East. W. West.	VI. ♎ Libra. - - 180
♄ Juno.	° Degrees.	VII. ♏ Scorpio. - 210
♃ Pallas.	' Minutes of Arc.	VIII. ♐ Sagittarius. 240
♅ Ceres.	" Seconds of Arc.	IX. ♑ Capricornus. 270
♃ Jupiter.	^h Hours.	X. ♒ Aquarius. - 300
♄ Saturn.	^m Minutes of Time.	XI. ♓ Pisces. - - 330
♁ The Georgian.	^s Seconds of Time.	

LAW TERMS, 1842,

As settled by Statutes 1 WILL. IV. { cap. 70, s. 6. (Passed July 23, 1830.)
 { cap. 3, s. 2. (Passed Dec. 23, 1830.)

HILARY TERM - - - -	Begins Jan. 11	Ends Jan. 31
EASTER - - - - -	Apr. 15	- - May 9
TRINITY - - - - -	May 22	- - June 13
MICHAELMAS - - - - -	Nov. 2	- - Nov. 25

For Returns see Statute 1 WILL. IV. cap. 3, s. 2. (Passed Dec. 23, 1830.)

UNIVERSITY TERMS, 1842.

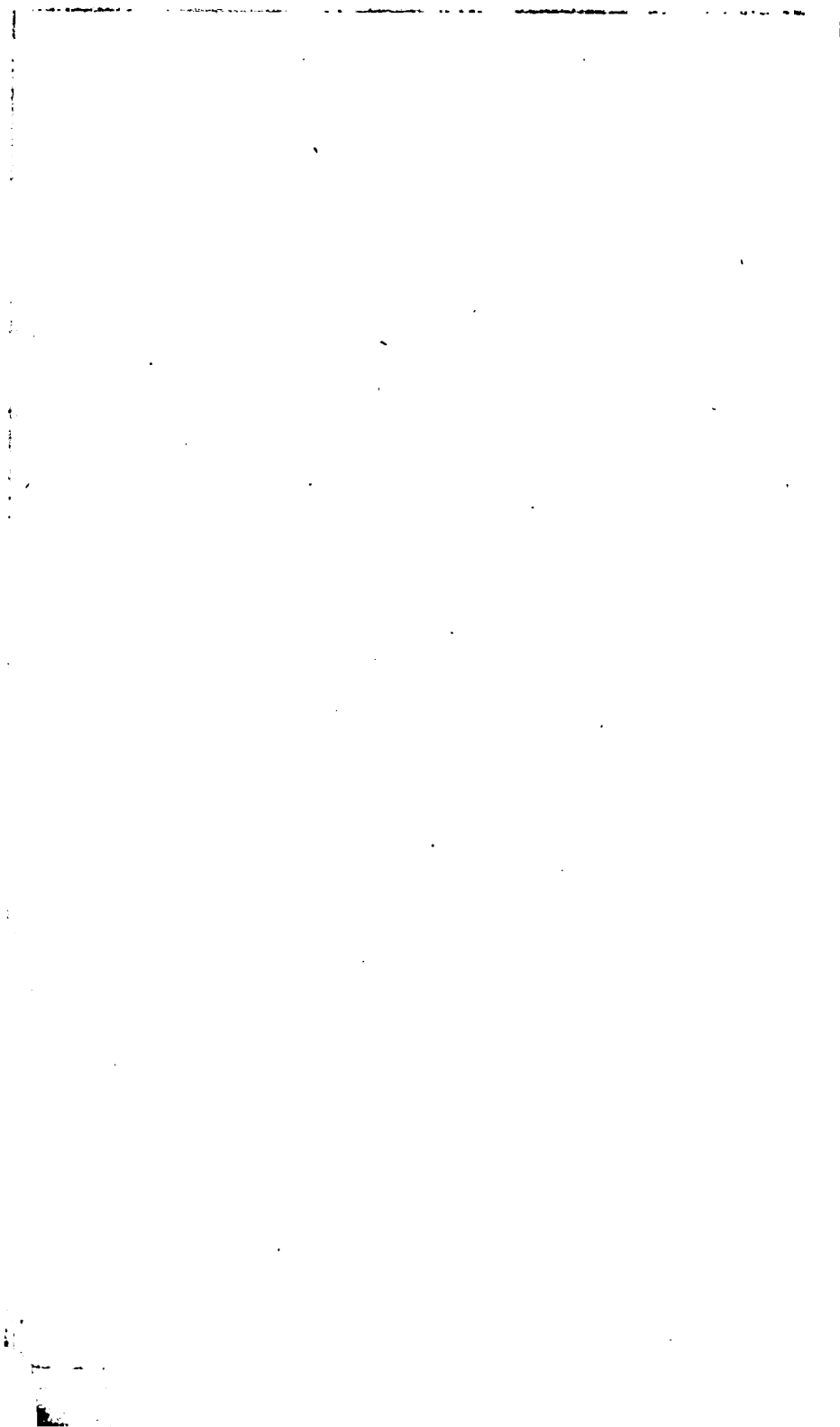
Terms.	OXFORD.		CAMBRIDGE.		
	Begins.	Ends.	Begins.	Divides.	Ends.
Lent - - -	Jan. 14	Mar. 19	Jan. 13	Feb. 14, Noon.	Mar. 18
Easter - -	April 6	May 14	April 6	May 22, Midnight.	July 8
Trinity - -	May 18	July 9	- - -	- - - - -	- - -
Michaelmas -	Oct. 10	Dec. 17	Oct. 10	Nov. 12, Midnight.	Dec. 16
	<i>The Act, July 5.</i>		<i>The Commencement, July 5.</i>		

ERRATA.

(Continued from page xv of the Nautical Almanac for 1841.)

 NAUTICAL ALMANAC FOR THE YEAR 1841.

Page 448, R. A. of γ^1 Eridani, Dec. 37, for	41 56	read	41 46
449, ——— β TAURI, Dec. 27 } —	{ 21 07	^{0 12}	{ 21 04
37 } —	{ 21 18	^{0 11}	{ 21 08
538, \odot 's Right Ascension	— 9 18 33 38	—	21 18 33 38
—————	— 20 49 14 26	—	8 49 14 26
586, 2nd line from the bottom,	— 7th	—	27th
592, 17th line from the top,	— 64 N.	—	61 N.



E P H E M E R I S

FOR THE YEAR

1842,

FOR THE MERIDIAN

OF THE

ROYAL OBSERVATORY AT GREENWICH.

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, to be added to Apparent Time.	Diff. for 1 hour.
		Apparent Right Ascension.	Diff. for 1 hour.	Apparent Declination.	Diff. for 1 hour.			
Sat.	1	h m s 18 46 45·79	11°036	S. 23 1 32·2	12°91	m s 1 10·99	m s 3 51·02	1°176
Sun.	2	18 51 10·65	11°022	22 56 22·4	14°05	1 10·94	4 19·24	1°162
Mon.	3	18 55 35·18	11°006	22 50 45·1	15°19	1 10·89	4 47·13	1°147
Tues.	4	18 59 59·33	10°990	22 44 40·5	16°32	1 10·84	5 14·65	1°130
Wed.	5	19 4 23·09	10°972	22 38 8·8	17°44	1 10·78	5 41·78	1°113
Thur.	6	19 8 46·42	10°954	22 31 10·2	18°56	1 10·72	6 8·48	1°094
Frid.	7	19 13 9·31	10°933	22 23 44·7	19°66	1 10·65	6 34·74	1°073
Sat.	8	19 17 31·70	10°912	22 15 52·8	20°76	1 10·58	7 0·50	1°052
Sun.	9	19 21 53·59	10°889	22 7 34·5	21°84	1 10·51	7 25·76	1°030
Mon.	10	19 26 14·92	10°865	21 58 50·2	22°92	1 10·43	7 50·47	1°006
Tues.	11	19 30 35·69	10°840	21 49 40·2	23°98	1 10·35	8 14·62	0°981
Wed.	12	19 34 55·86	10°814	21 40 4·7	25°03	1 10·27	8 38·16	0°955
Thur.	13	19 39 15·40	10°787	21 30 4·0	26°07	1 10·19	9 1·09	0°928
Frid.	14	19 43 34·29	10°759	21 19 38·4	27°09	1 10·10	9 23·35	0°900
Sat.	15	19 47 52·51	10°730	21 8 48·2	28°10	1 10·01	9 44·95	0°872
Sun.	16	19 52 10·04	10°700	20 57 33·7	29°09	1 9·92	10 5·87	0°841
Mon.	17	19 56 26·84	10°670	20 45 55·4	30°08	1 9·82	10 26·06	0°811
Tues.	18	20 0 42·92	10°638	20 33 53·5	31°05	1 9·72	10 45·52	0°780
Wed.	19	20 4 58·24	10°607	20 21 28·4	32°01	1 9·62	11 4·24	0°749
Thur.	20	20 9 12·80	10°574	20 8 40·3	32°94	1 9·52	11 22·19	0°715
Frid.	21	20 13 26·58	10°541	19 55 29·8	33°87	1 9·42	11 39·36	0°683
Sat.	22	20 17 39·57	10°508	19 41 57·0	34°78	1 9·32	11 55·75	0°650
Sun.	23	20 21 51·77	10°475	19 28 2·5	35°67	1 9·21	12 11·35	0°617
Mon.	24	20 26 3·16	10°441	19 13 46·5	36°55	1 9·10	12 26·15	0°583
Tues.	25	20 30 13·74	10°407	18 59 9·4	37°42	1 8·99	12 40·14	0°549
Wed.	26	20 34 23·52	10°374	18 44 11·5	38°26	1 8·88	12 53·32	0°516
Thur.	27	20 38 32·49	10°340	18 28 53·2	39°09	1 8·77	13 5·70	0°482
Frid.	28	20 42 40·64	10°306	18 13 14·9	39°91	1 8·66	13 17·26	0°448
Sat.	29	20 46 47·98	10°272	17 57 16·9	40°72	1 8·54	13 28·02	0°414
Sun.	30	20 50 54·51	10°238	17 40 59·6	41°50	1 8·43	13 37·96	0°381
Mon.	31	20 55 0·23	10°205	17 24 23·5	42°28	1 8·31	13 47·10	0°347
Tues.	32	20 59 5·14		S. 17 7 28·8		1 8·20	13 55·43	

* Mean Time of the Semidiameter passing may be found by subtracting 0°19 from the Sidereal Time.

AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S			Equation of Time, to be subtracted from Mean Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semidiam.*		
Sat.	1	^h 18 ^m 46 ^s 45 ·08	S. 23° 1' 32" ·9	16' 17" ·3	^m 3 ^s 50 ·94	^h 18 ^m 42 ^s 54 ·14
Sun.	2	18 51 9 ·85	22 56 23 ·3	16 17 ·3	4 19 ·15	18 46 50 ·70
Mon.	3	18 55 34 ·30	22 50 46 ·3	16 17 ·3	4 47 ·04	18 50 47 ·26
Tues.	4	18 59 58 ·87	22 44 41 ·9	16 17 ·3	5 14 ·55	18 54 43 ·82
Wed.	5	19 4 22 ·05	22 38 10 ·4	16 17 ·3	5 41 ·67	18 58 40 ·37
Thur.	6	19 8 45 ·30	22 31 12 ·0	16 17 ·2	6 8 ·37	19 2 36 ·93
Frid.	7	19 13 8 ·11	22 23 46 ·8	16 17 ·2	6 34 ·62	19 6 33 ·49
Sat.	8	19 17 30 ·43	22 15 55 ·2	16 17 ·2	7 0 ·38	19 10 30 ·05
Sun.	9	19 21 52 ·24	22 7 37 ·2	16 17 ·1	7 25 ·63	19 14 26 ·61
Mon.	10	19 26 13 ·50	21 58 53 ·2	16 17 ·1	7 50 ·34	19 18 23 ·17
Tues.	11	19 30 34 ·20	21 49 43 ·4	16 17 ·0	8 14 ·48	19 22 19 ·72
Wed.	12	19 34 54 ·30	21 40 8 ·2	16 17 ·0	8 38 ·02	19 26 16 ·28
Thur.	13	19 39 13 ·78	21 30 7 ·8	16 16 ·9	9 0 ·94	19 30 12 ·84
Frid.	14	19 43 32 ·61	21 19 42 ·5	16 16 ·8	9 23 ·21	19 34 9 ·40
Sat.	15	19 47 50 ·76	21 8 52 ·7	16 16 ·8	9 44 ·81	19 38 5 ·96
Sun.	16	19 52 8 ·23	20 57 38 ·6	16 16 ·7	10 5 ·72	19 42 2 ·51
Mon.	17	19 56 24 ·98	20 46 0 ·6	16 16 ·6	10 25 ·91	19 45 59 ·07
Tues.	18	20 0 41 ·01	20 33 59 ·0	16 16 ·5	10 45 ·38	19 49 55 ·63
Wed.	19	20 4 56 ·28	20 21 34 ·2	16 16 ·5	11 4 ·10	19 53 52 ·18
Thur.	20	20 9 10 ·79	20 8 46 ·5	16 16 ·4	11 23 ·05	19 57 48 ·71
Frid.	21	20 13 24 ·53	19 55 36 ·3	16 16 ·3	11 39 ·23	20 1 45 ·30
Sat.	22	20 17 37 ·48	19 42 3 ·9	16 16 ·2	11 55 ·62	20 5 41 ·86
Sun.	23	20 21 49 ·64	19 33 9 ·7	16 16 ·1	12 11 ·22	20 9 38 ·41
Mon.	24	20 26 0 ·99	19 13 54 ·0	16 16 ·0	12 26 ·02	20 13 34 ·97
Tues.	25	20 30 11 ·54	18 59 17 ·2	16 15 ·8	12 40 ·02	20 17 31 ·53
Wed.	26	20 34 21 ·29	18 44 19 ·6	16 15 ·7	12 53 ·21	20 21 28 ·08
Thur.	27	20 38 30 ·23	18 29 1 ·6	16 15 ·6	13 5 ·59	20 25 24 ·64
Frid.	28	20 42 38 ·36	18 13 23 ·6	16 15 ·5	13 17 ·16	20 29 21 ·20
Sat.	29	20 46 45 ·68	17 57 26 ·0	16 15 ·3	13 27 ·92	20 33 17 ·75
Sun.	30	20 50 52 ·18	17 41 9 ·0	16 15 ·2	13 37 ·87	20 37 14 ·31
Mon.	31	20 54 57 ·88	17 24 33 ·2	16 15 ·0	13 47 ·01	20 41 10 ·87
Tues.	32	20 59 2 ·77	S. 17° 7' 38" ·7	16 14 ·8	13 55 ·35	20 45 7 ·42

* The Semidiameter for Apparent Noon may be assumed the same as that for Mean Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S			
	Longitude.	Latitude.		Semidiameter.		Horizontal Parallax.	
	Noon.	Noon.	Noon.	Noon.	Midnight.	Noon.	Midnight.
1	289° 44' 42" 3	S. 0° 08'	9.9926354	16° 19' 0"	16° 13' 4"	59° 52' 6"	59° 32' 2"
2	281 45 51 7	0 18	9.9926405	16 7 5	16 1 3	59 10 5	58 47 8
3	282 47 1 4	0 25	9.9926480	15 55 0	15 48 7	58 24 6	58 1 6
4	283 48 11 2	0 30	9.9926579	15 42 6	15 36 6	57 39 2	57 17 1
5	284 49 21 2	0 33	9.9926701	15 30 9	15 25 5	56 56 2	56 36 2
6	285 50 31 3	0 32	9.9926844	15 20 4	15 15 7	56 17 7	56 0 2
7	286 51 41 5	0 28	9.9927007	15 11 2	15 7 1	55 43 9	55 28 8
8	287 52 51 6	0 21	9.9927189	15 3 3	14 59 8	55 14 9	55 2 0
9	288 54 1 7	S. 0 12	9.9927389	14 56 6	14 53 7	54 50 1	54 39 6
10	289 55 11 5	0 00	9.9927606	14 51 1	14 48 8	54 30 0	54 21 6
11	290 56 21 1	N. 0 12	9.9927840	14 46 7	14 45 0	54 14 1	54 7 8
12	291 57 30 2	0 26	9.9928090	14 43 6	14 42 5	54 2 7	53 58 6
13	292 58 38 9	0 40	9.9928356	14 41 8	14 41 6	53 56 1	53 55 1
14	293 59 46 9	0 53	9.9928638	14 41 7	14 42 2	53 55 5	53 57 4
15	295 0 54 3	0 65	9.9928937	14 43 2	14 44 8	54 1 2	54 6 9
16	296 2 1 0	0 75	9.9929254	14 46 9	14 49 6	54 14 7	54 24 7
17	297 3 6 8	0 83	9.9929589	14 52 9	14 56 8	54 36 7	54 51 0
18	298 4 11 7	0 87	9.9929944	15 1 4	15 6 7	55 8 0	55 27 2
19	299 5 15 7	0 89	9.9930319	15 12 4	15 18 8	55 48 4	56 11 9
20	300 6 18 7	0 88	9.9930716	15 25 8	15 33 2	56 37 6	57 4 6
21	301 7 20 6	0 84	9.9931137	15 41 0	15 49 0	57 33 2	58 2 5
22	302 8 21 5	0 77	9.9931581	15 57 1	16 5 1	58 32 4	59 1 6
23	303 9 21 4	0 68	9.9932050	16 12 8	16 20 1	59 30 0	59 56 7
24	304 10 20 2	0 57	9.9932545	16 26 7	16 32 5	60 20 9	60 42 1
25	305 11 18 0	0 44	9.9933065	16 37 2	16 40 7	60 59 5	61 12 4
26	306 12 14 9	0 31	9.9933611	16 43 0	16 43 9	61 20 8	61 24 1
27	307 13 10 8	0 18	9.9934184	16 43 5	16 41 7	61 22 4	61 15 8
28	308 14 5 8	N. 0 06	9.9934783	16 38 5	16 34 2	61 4 3	60 48 6
29	309 14 59 9	S. 0 04	9.9935408	16 28 9	16 22 7	60 29 0	60 6 4
30	310 15 53 1	0 13	9.9936057	16 16 0	16 8 7	59 41 5	59 14 8
31	311 16 45 4	0 19	9.9936730	16 1 1	15 53 4	58 47 1	58 18 8
32	312 17 37 0	S. 0 21	9.9937425	15 45 8	15 38 4	57 51 0	57 23 7

MEAN TIME.

Day of the Week.	Day of the Month.	THE MOON'S						Meridian Passage.
		Longitude.		Latitude.		Age.		
		Noon.	Midnight.	Noon.	Midnight.	Noon.		
Sat.	1	159° 10' 1" 4	166° 21' 21" 9	S. 3° 20' 17" 0	S. 3° 49' 22" 4	19 ^d 6	16 ^h 27 ^m 7	
Sun.	2	173 27 49 0	180 29 11 5	4 14 34 8	4 35 38 7	20 6	17 15 8	
Mon.	3	187 25 21 1	194 16 27 0	4 52 23 7	5 4 44 9	21 6	18 3 5	
Tues.	4	201 2 26 4	207 43 31 7	5 12 41 5	5 16 16 8	22 6	18 52 0	
Wed.	5	214 19 54 5	220 51 48 8	5 15 36 9	5 10 51 5	23 6	19 41 9	
Thur.	6	227 19 30 1	233 43 14 1	5 2 11 6	4 49 50 4	24 6	20 33 4	
Frid.	7	240 3 16 7	246 19 54 0	4 34 2 6	4 15 4 9	25 6	21 26 2	
Sat.	8	252 33 20 3	258 43 51 3	3 53 14 2	3 28 49 4	26 6	22 19 1	
Sun.	9	264 51 40 4	270 57 0 6	3 2 10 0	2 33 35 6	27 6	23 10 9	
Mon.	10	277 0 5 7	283 1 8 1	2 3 26 7	1 32 4 3	28 6	0	
Tues.	11	289 0 20 8	294 57 56 8	S. 0 59 49 7	S. 0 27 3 2	29 6	0 0 6	
Wed.	12	300 54 10 2	306 49 16 6	N. 0 5 54 3	N. 0 38 42 0	0 8	0 47 6	
Thur.	13	312 43 31 6	318 37 13 2	1 11 0 9	1 42 30 8	1 8	1 31 9	
Frid.	14	324 30 40 4	330 24 14 0	2 12 54 5	2 41 53 8	2 8	2 13 8	
Sat.	15	336 18 17 3	342 13 14 9	3 9 12 0	3 34 32 5	3 8	2 54 2	
Sun.	16	348 9 33 3	354 7 40 9	3 57 40 0	4 18 20 3	4 8	3 34 0	
Mon.	17	0 8 7 1	6 11 23 9	4 36 18 9	4 51 21 6	5 8	4 14 1	
Tues.	18	12 18 2 8	18 28 36 4	5 3 15 5	5 11 47 9	6 8	4 55 8	
Wed.	19	24 43 37 1	31 3 36 6	5 16 46 0	5 17 59 5	7 8	5 40 2	
Thur.	20	37 29 4 7	44 0 29 1	5 15 16 9	5 8 30 3	8 8	6 28 5	
Frid.	21	50 38 12 5	57 22 34 3	4 57 32 4	4 42 20 1	9 8	7 21 5	
Sat.	22	64 13 46 7	71 11 54 3	4 22 52 0	3 59 13 5	10 8	8 19 5	
Sun.	23	78 16 53 0	85 28 29 2	3 31 33 1	3 0 8 1	11 8	9 21 5	
Mon.	24	92 46 18 1	100 9 44 8	2 25 19 9	1 47 40 3	12 8	10 25 3	
Tues.	25	107 38 3 1	115 10 16 5	N. 1 7 41 9	N. 0 24 5 9	13 8	11 28 0	
Wed.	26	122 45 21 0	130 22 5 5	S. 0 15 50 8	S. 0 11 5 8	14 8	12 27 8	
Thur.	27	137 59 15 8	145 35 36 3	1 38 53 2	1 11 5 8	15 8	13 24 0	
Frid.	28	153 9 54 0	160 41 0 8	2 54 34 8	2 11 5 8	16 8	14 16 9	
Sat.	29	168 7 56 1	175 29 47 7	3 57 10 4	3 11 5 8	17 8	15 7 6	
Sun.	30	182 45 54 8	189 55 47 0	4 59 3 2	4 11 5 8	18 8	15 57 3	
Mon.	31	196 59 5 4	203 55 40 7	5 59 21 7	5 11 5 8	19 8	16 47 1	
Tues.	32	210 45 32 5	217 28 49 8	S. 6 59 10 0	S. 6 11 5 8	20 8	17 37 8	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>SATURDAY 1.</i>				<i>MONDAY 3.</i>			
0	h m s 10 37 59·69	N. 5 2 41·9	158·73	0	h m s 12 19 29·99	S. 7 25 20·1	147·60
1	10 40 10·10	4 46 49·5	158·83	1	12 21 35·13	7 40 5·7	147·05
2	10 42 20·29	4 30 56·5	158·92	2	12 23 40·27	7 54 48·0	146·50
3	10 44 30·25	4 15 3·0	158·98	3	12 25 45·42	8 9 27·0	145·95
4	10 46 39·99	3 59 9·1	159·05	4	12 27 50·59	8 24 2·7	145·38
5	10 48 49·52	3 43 14·8	159·08	5	12 29 55·78	8 38 35·0	144·78
6	10 50 58·85	3 27 20·3	159·10	6	12 32 0·99	8 53 3·7	144·20
7	10 53 7·97	3 11 25·7	159·12	7	12 34 6·23	9 7 28·9	143·60
8	10 55 16·89	2 55 31·0	159·10	8	12 36 11·50	9 21 50·5	142·98
9	10 57 25·62	2 39 36·4	159·08	9	12 38 16·81	9 36 8·4	142·37
10	10 59 34·17	2 23 41·9	159·05	10	12 40 22·16	9 50 22·6	141·72
11	11 1 42·53	2 7 47·6	158·98	11	12 42 27·55	10 4 32·9	141·08
12	11 3 50·71	1 51 53·7	158·92	12	12 44 32·99	10 18 39·4	140·42
13	11 5 58·72	1 36 0·2	158·85	13	12 46 38·48	10 32 41·9	139·77
14	11 8 6·57	1 20 7·1	158·75	14	12 48 44·03	10 46 40·5	139·07
15	11 10 14·25	1 4 14·6	158·63	15	12 50 49·64	11 0 34·9	138·40
16	11 12 21·78	0 48 22·8	158·50	16	12 52 55·31	11 14 25·3	137·70
17	11 14 29·16	0 32 31·8	158·37	17	12 55 1·05	11 28 11·5	136·98
18	11 16 36·39	0 16 41·6	158·22	18	12 57 6·86	11 41 53·4	136·28
19	11 18 43·48	N. 0 0 52·3	158·05	19	12 59 12·74	11 55 31·1	135·53
20	11 20 50·43	S. 0 14 56·0	157·85	20	13 1 18·70	12 9 4·3	134·82
21	11 22 57·25	0 30 43·1	157·67	21	13 3 24·74	12 22 33·2	134·07
22	11 25 3·94	0 46 29·1	157·47	22	13 5 30·87	12 35 57·6	133·30
23	11 27 10·52	S. 1 2 13·9	157·23	23	13 7 37·08	S. 12 49 17·4	132·55
<i>SUNDAY 2.</i>				<i>TUESDAY 4.</i>			
0	11 29 16·97	S. 1 17 57·3	157·00	0	13 9 43·38	S. 13 2 32·7	131·77
1	11 31 23·32	1 33 39·3	156·77	1	13 11 49·78	13 15 43·3	130·98
2	11 33 29·56	1 49 19·9	156·48	2	13 13 56·27	13 28 49·2	130·20
3	11 35 35·70	2 4 58·8	156·22	3	13 16 2·86	13 41 50·4	129·38
4	11 37 41·75	2 20 36·1	155·93	4	13 18 9·56	13 54 46·7	128·57
5	11 39 47·70	2 36 11·7	155·63	5	13 20 16·36	14 7 38·1	127·75
6	11 41 53·57	2 51 45·5	155·32	6	13 22 23·28	14 20 24·6	126·92
7	11 43 59·36	3 7 17·4	154·98	7	13 24 30·30	14 33 6·1	126·07
8	11 46 5·07	3 22 47·3	154·65	8	13 26 37·44	14 45 42·5	125·22
9	11 48 10·71	3 38 15·2	154·30	9	13 28 44·69	14 58 13·8	124·35
10	11 50 16·28	3 53 41·0	153·95	10	13 30 52·06	15 10 39·9	123·50
11	11 52 21·79	4 9 4·7	153·55	11	13 32 59·55	15 23 0·9	122·60
12	11 54 27·25	4 24 26·0	153·17	12	13 35 7·17	15 35 16·5	121·72
13	11 56 32·65	4 39 45·0	152·77	13	13 37 14·92	15 47 26·8	120·82
14	11 58 38·01	4 55 1·6	152·37	14	13 39 22·79	15 59 31·7	119·92
15	12 0 48·38	5 10 15·8	151·93	15	13 41 30·80	16 11 31·2	118·98
16	12 2 48·60	5 25 27·4	151·48	16	13 43 38·94	16 23 25·1	118·08
17	12 4 53·85	5 40 36·3	151·05	17	13 45 47·22	16 35 13·6	117·13
18	12 6 59·06	5 55 42·6	150·60	18	13 47 55·63	16 46 56·4	116·19
19	12 9 4·25	6 10 46·2	150·12	19	13 50 4·18	16 58 33·5	115·25
20	12 11 9·42	6 25 46·9	149·63	20	13 52 12·88	17 10 5·0	114·28
21	12 13 14·58	6 40 44·7	149·15	21	13 54 21·71	17 21 30·7	113·32
22	12 15 19·72	6 55 39·6	148·63	22	13 56 30·69	17 32 50·6	112·33
23	12 17 24·86	7 10 31·4	148·12	23	13 58 39·82	17 44 4·6	111·35
24	12 19 30·00	S. 7 25 20·1		24	14 0 40·00	S. 17 55 10·7	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 th .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 th .
WEDNESDAY 5.				FRIDAY 7.			
	h m s	° ' "	"		h m s	° ' "	"
0	14 0 49.09	S. 17 55 12.7	110.87	0	15 47 14.04	S. 24 38 27.3	53.88
1	14 2 58.51	18 6 14.9	109.85	1	15 49 30.44	24 43 50.6	52.55
2	14 5 8.08	18 17 11.0	108.85	2	15 51 46.93	24 49 5.9	51.23
3	14 7 17.80	18 28 1.1	107.83	3	15 54 3.52	24 54 13.3	49.88
4	14 9 27.68	18 38 45.1	106.80	4	15 56 20.21	24 59 12.6	48.57
5	14 11 37.71	18 49 22.9	105.85	5	15 58 36.99	25 4 4.0	47.23
6	14 13 47.89	18 59 54.4	104.82	6	16 0 53.85	25 8 47.4	45.87
7	14 15 58.23	19 10 19.7	103.17	7	16 3 10.80	25 13 22.6	44.55
8	14 18 8.72	19 20 38.7	102.12	8	16 5 27.83	25 17 49.9	43.18
9	14 20 19.38	19 30 51.4	101.03	9	16 7 44.94	25 22 9.0	41.83
10	14 22 30.19	19 40 57.6	99.97	10	16 10 2.11	25 26 20.0	40.48
11	14 24 41.16	19 50 57.4	98.87	11	16 12 19.36	25 30 22.9	39.12
12	14 26 52.29	20 0 50.6	97.78	12	16 14 36.67	25 34 17.6	37.77
13	14 29 3.58	20 10 37.3	96.68	13	16 16 54.04	25 38 4.2	36.38
14	14 31 15.03	20 20 17.4	95.57	14	16 19 11.47	25 41 42.5	35.03
15	14 33 26.63	20 29 50.8	94.45	15	16 21 28.94	25 45 12.7	33.67
16	14 35 38.40	20 39 17.5	93.33	16	16 23 46.47	25 48 34.7	32.28
17	14 37 50.33	20 48 37.5	92.20	17	16 26 4.03	25 51 48.4	30.93
18	14 40 2.41	20 57 50.7	91.07	18	16 28 21.64	25 54 54.0	29.55
19	14 42 14.66	21 6 57.1	89.92	19	16 30 39.28	25 57 51.3	28.17
20	14 44 27.06	21 15 56.6	88.78	20	16 32 56.95	26 0 40.3	26.80
21	14 46 39.62	21 24 49.1	87.60	21	16 35 14.65	26 3 21.1	25.42
22	14 48 52.34	21 33 34.7	86.48	22	16 37 32.36	26 5 53.6	24.06
23	14 51 5.21	S. 21 42 18.3	85.27	23	16 39 50.10	S. 26 8 17.9	22.67
THURSDAY 6.				SATURDAY 8.			
	h m s	° ' "	"		h m s	° ' "	"
0	14 53 18.24	S. 21 50 44.9	84.08	0	16 42 7.84	S. 26 10 33.9	21.28
1	14 55 31.43	21 59 9.4	82.88	1	16 44 25.60	26 12 41.6	19.92
2	14 57 44.77	22 7 26.7	81.70	2	16 46 43.35	26 14 41.1	18.52
3	14 59 58.26	22 15 36.9	80.50	3	16 49 1.11	26 16 32.2	17.15
4	15 2 11.90	22 23 39.9	79.28	4	16 51 18.85	26 18 15.1	15.77
5	15 4 25.70	22 31 35.6	78.07	5	16 53 36.59	26 19 49.7	14.40
6	15 6 39.65	22 39 24.0	76.85	6	16 55 54.30	26 21 16.1	13.00
7	15 8 53.74	22 47 5.1	75.62	7	16 58 12.00	26 22 34.1	11.63
8	15 11 7.98	22 54 38.8	74.38	8	17 0 29.67	26 23 43.9	10.25
9	15 13 22.36	23 2 5.1	73.15	9	17 2 47.31	26 24 45.4	8.88
10	15 15 36.89	23 9 24.0	71.88	10	17 5 4.91	26 25 38.7	7.50
11	15 17 51.56	23 16 35.3	70.65	11	17 7 22.46	26 26 23.7	6.12
12	15 20 6.36	23 23 39.2	69.38	12	17 9 39.97	26 27 0.4	4.75
13	15 22 21.30	23 30 35.5	68.12	13	17 11 57.43	26 27 28.9	3.38
14	15 24 36.38	23 37 24.2	66.85	14	17 14 14.83	26 27 49.2	2.00
15	15 26 51.59	23 44 5.3	65.58	15	17 16 32.17	26 28 1.2	0.65
16	15 29 6.93	23 50 38.8	64.28	16	17 18 49.44	26 28 5.1	0.73
17	15 31 22.40	23 57 4.5	63.02	17	17 21 6.61	26 28 0.7	2.08
18	15 33 38.00	24 3 22.6	61.72	18	17 23 23.81	26 27 48.2	3.47
19	15 35 53.72	24 9 32.9	60.42	19	17 25 40.94	26 27 1.1	3.80
20	15 38 9.55	24 15 35.4	59.13	20	17 27 58.31	26 26 38.0	3.18
21	15 40 25.51	24 21 30.2	57.82	21	17 30 15.92	26 25 51.3	2.55
22	15 42 41.57	24 27 17.1	56.50	22	17 32 33.27	26 25 14.6	1.92
23	15 44 57.75	24 32 56.1	55.20	23	17 34 50.56	26 24 27.9	1.29

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
SUNDAY 9.				TUESDAY 11.			
0	^h 17 ^m 37 ^s 4 ^{.64}	S. 26 23 41 ^{.8}	11 ^{.57}	0	^h 19 ^m 22 ^s 55 ^{.66}	S. 23 5 58 ^{.3}	69 ^{.47}
1	17 39 21 ^{.09}	26 22 32 ^{.4}	12 ^{.92}	1	19 25 2 ^{.42}	22 59 1 ^{.5}	70 ^{.50}
2	17 41 37 ^{.43}	26 21 14 ^{.9}	14 ^{.25}	2	19 27 8 ^{.91}	22 51 58 ^{.5}	71 ^{.52}
3	17 43 53 ^{.65}	26 19 49 ^{.4}	15 ^{.58}	3	19 29 15 ^{.15}	22 44 49 ^{.4}	72 ^{.53}
4	17 46 9 ^{.75}	26 18 15 ^{.9}	16 ^{.92}	4	19 31 21 ^{.11}	22 37 34 ^{.2}	73 ^{.52}
5	17 48 25 ^{.72}	26 16 34 ^{.4}	18 ^{.23}	5	19 33 26 ^{.82}	22 30 18 ^{.1}	74 ^{.52}
6	17 50 41 ^{.55}	26 14 45 ^{.0}	19 ^{.57}	6	19 35 32 ^{.25}	22 22 46 ^{.0}	75 ^{.48}
7	17 52 57 ^{.24}	26 12 47 ^{.6}	20 ^{.87}	7	19 37 37 ^{.42}	22 15 13 ^{.1}	76 ^{.47}
8	17 55 12 ^{.80}	26 10 42 ^{.4}	22 ^{.20}	8	19 39 42 ^{.33}	22 7 34 ^{.3}	77 ^{.43}
9	17 57 28 ^{.21}	26 8 29 ^{.2}	23 ^{.48}	9	19 41 46 ^{.96}	21 59 49 ^{.7}	78 ^{.38}
10	17 59 43 ^{.47}	26 6 8 ^{.3}	24 ^{.80}	10	19 43 51 ^{.33}	21 51 59 ^{.4}	79 ^{.33}
11	18 1 58 ^{.57}	26 3 39 ^{.5}	26 ^{.10}	11	19 45 55 ^{.43}	21 44 3 ^{.4}	80 ^{.27}
12	18 4 13 ^{.51}	26 1 2 ^{.9}	27 ^{.38}	12	19 47 59 ^{.26}	21 36 1 ^{.8}	81 ^{.20}
13	18 6 28 ^{.29}	25 58 18 ^{.6}	28 ^{.68}	13	19 50 2 ^{.82}	21 27 54 ^{.6}	82 ^{.13}
14	18 8 42 ^{.90}	25 55 26 ^{.5}	29 ^{.95}	14	19 52 6 ^{.12}	21 19 41 ^{.9}	83 ^{.05}
15	18 10 57 ^{.34}	25 52 26 ^{.8}	31 ^{.23}	15	19 54 9 ^{.15}	21 11 23 ^{.8}	83 ^{.93}
16	18 13 11 ^{.61}	25 49 19 ^{.4}	32 ^{.50}	16	19 56 11 ^{.91}	21 3 0 ^{.2}	84 ^{.72}
17	18 15 25 ^{.69}	25 46 4 ^{.4}	33 ^{.77}	17	19 58 14 ^{.40}	20 54 31 ^{.3}	85 ^{.70}
18	18 17 39 ^{.60}	25 42 41 ^{.8}	35 ^{.02}	18	20 0 16 ^{.62}	20 45 57 ^{.1}	86 ^{.57}
19	18 19 53 ^{.31}	25 39 11 ^{.7}	36 ^{.28}	19	20 2 18 ^{.58}	20 37 17 ^{.7}	87 ^{.43}
20	18 22 6 ^{.84}	25 35 34 ^{.0}	37 ^{.52}	20	20 4 20 ^{.27}	20 28 33 ^{.1}	88 ^{.30}
21	18 24 20 ^{.17}	25 31 48 ^{.9}	38 ^{.77}	21	20 6 21 ^{.69}	20 19 43 ^{.3}	89 ^{.16}
22	18 26 33 ^{.30}	25 27 56 ^{.3}	40 ^{.00}	22	20 8 22 ^{.85}	20 10 48 ^{.4}	89 ^{.97}
23	18 28 46 ^{.23}	S. 25 23 56 ^{.3}	41 ^{.22}	23	20 10 23 ^{.75}	S. 20 1 48 ^{.6}	90 ^{.83}
MONDAY 10.				WEDNESDAY 12.			
0	18 30 58 ^{.96}	S. 25 19 49 ^{.0}	42 ^{.45}	0	20 12 24 ^{.37}	S. 19 52 43 ^{.7}	91 ^{.63}
1	18 33 11 ^{.48}	25 15 34 ^{.3}	43 ^{.66}	1	20 14 24 ^{.74}	19 43 38 ^{.9}	92 ^{.43}
2	18 35 23 ^{.79}	25 11 12 ^{.4}	44 ^{.87}	2	20 16 24 ^{.85}	19 34 19 ^{.3}	93 ^{.23}
3	18 37 35 ^{.88}	25 6 43 ^{.2}	46 ^{.07}	3	20 18 24 ^{.69}	19 24 59 ^{.9}	94 ^{.03}
4	18 39 47 ^{.76}	25 2 6 ^{.8}	47 ^{.25}	4	20 20 24 ^{.27}	19 15 35 ^{.7}	94 ^{.83}
5	18 41 59 ^{.41}	24 57 23 ^{.3}	48 ^{.43}	5	20 22 23 ^{.60}	19 6 6 ^{.7}	95 ^{.68}
6	18 44 10 ^{.84}	24 52 32 ^{.7}	49 ^{.62}	6	20 24 22 ^{.66}	18 56 33 ^{.2}	96 ^{.57}
7	18 46 22 ^{.05}	24 47 35 ^{.0}	50 ^{.78}	7	20 26 21 ^{.47}	18 46 55 ^{.0}	97 ^{.12}
8	18 48 33 ^{.03}	24 42 30 ^{.3}	51 ^{.95}	8	20 28 20 ^{.03}	18 37 12 ^{.3}	97 ^{.88}
9	18 50 43 ^{.77}	24 37 18 ^{.6}	53 ^{.10}	9	20 30 18 ^{.32}	18 27 25 ^{.0}	98 ^{.60}
10	18 52 54 ^{.28}	24 32 0 ^{.0}	54 ^{.27}	10	20 32 16 ^{.37}	18 17 33 ^{.4}	99 ^{.26}
11	18 55 4 ^{.56}	24 26 34 ^{.4}	55 ^{.38}	11	20 34 14 ^{.16}	18 7 37 ^{.3}	100 ^{.78}
12	18 57 14 ^{.59}	24 21 2 ^{.1}	56 ^{.52}	12	20 36 11 ^{.70}	17 57 36 ^{.9}	100 ^{.78}
13	18 59 24 ^{.39}	24 15 23 ^{.0}	57 ^{.65}	13	20 38 9 ^{.00}	17 47 32 ^{.2}	101 ^{.50}
14	19 1 33 ^{.94}	24 9 37 ^{.1}	58 ^{.75}	14	20 40 6 ^{.04}	17 37 23 ^{.2}	102 ^{.18}
15	19 3 43 ^{.25}	24 3 44 ^{.6}	59 ^{.87}	15	20 42 2 ^{.85}	17 27 10 ^{.1}	102 ^{.88}
16	19 5 52 ^{.31}	23 57 45 ^{.4}	60 ^{.97}	16	20 43 59 ^{.41}	17 16 52 ^{.8}	103 ^{.55}
17	19 8 1 ^{.12}	23 51 39 ^{.6}	62 ^{.07}	17	20 45 55 ^{.73}	17 6 31 ^{.5}	104 ^{.22}
18	19 10 9 ^{.68}	23 45 27 ^{.2}	63 ^{.13}	18	20 47 51 ^{.81}	16 56 6 ^{.2}	104 ^{.90}
19	19 12 17 ^{.98}	23 39 8 ^{.4}	64 ^{.22}	19	20 49 47 ^{.65}	16 45 36 ^{.8}	105 ^{.53}
20	19 14 26 ^{.03}	23 32 43 ^{.1}	65 ^{.28}	20	20 51 43 ^{.26}	16 35 8 ^{.6}	106 ^{.19}
21	19 16 33 ^{.83}	23 26 11 ^{.4}	66 ^{.35}	21	20 53 38 ^{.63}	16 24 26 ^{.5}	106 ^{.83}
22	19 18 41 ^{.37}	23 19 33 ^{.3}	67 ^{.40}	22	20 55 33 ^{.78}	16 13 45 ^{.6}	107 ^{.46}
23	19 20 48 ^{.65}	23 12 48 ^{.9}	68 ^{.43}	23	20 57 28 ^{.69}	16 3 0 ^{.9}	108 ^{.07}
24	19 22 55 ^{.66}	S. 23 5 58 ^{.3}		24	20 59 23 ^{.38}	S. 15 52 12 ^{.5}	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
THURSDAY 13.				SATURDAY 15.			
0	20 59 23.38	S. 15 52 12.5	108.67	0	22 27 35.94	S. 6 16 28.3	128.73
1	21 1 17.85	15 41 20.5	109.87	1	22 29 23.07	6 3 35.9	128.95
2	21 3 12.09	15 30 24.9	109.87	2	22 31 10.13	5 50 42.2	129.20
3	21 5 6.12	15 19 25.7	110.45	3	22 32 57.13	5 37 47.0	129.42
4	21 6 59.92	15 8 23.0	111.03	4	22 34 44.06	5 24 50.5	129.65
5	21 8 53.52	14 57 16.8	111.60	5	22 36 30.93	5 11 52.6	129.85
6	21 10 46.90	14 46 7.2	112.15	6	22 38 17.75	4 58 53.5	130.05
7	21 12 40.07	14 34 54.3	112.70	7	22 40 4.53	4 45 53.2	130.25
8	21 14 33.04	14 23 38.1	113.25	8	22 41 51.25	4 32 51.7	130.43
9	21 16 25.80	14 12 18.6	113.80	9	22 43 37.94	4 19 49.1	130.63
10	21 18 18.35	14 0 55.8	114.32	10	22 45 24.58	4 6 45.3	130.80
11	21 20 10.72	13 49 29.9	114.83	11	22 47 11.19	3 53 40.5	130.97
12	21 22 2.88	13 38 0.9	115.35	12	22 48 57.77	3 40 34.7	131.13
13	21 23 54.85	13 26 28.8	115.87	13	22 50 44.32	3 27 27.9	131.30
14	21 25 46.63	13 14 53.6	116.35	14	22 52 30.85	3 14 20.1	131.43
15	21 27 38.22	13 3 15.5	116.83	15	22 54 17.37	3 1 11.5	131.58
16	21 29 29.63	12 51 34.5	117.33	16	22 56 3.86	2 48 2.0	131.73
17	21 31 20.85	12 39 50.5	117.80	17	22 57 50.35	2 34 51.6	131.85
18	21 33 11.90	12 28 3.7	118.25	18	22 59 36.83	2 21 40.5	131.98
19	21 35 2.77	12 16 14.2	118.72	19	23 1 23.31	2 8 28.6	132.08
20	21 36 53.46	12 4 21.9	119.17	20	23 3 9.79	1 55 16.1	132.22
21	21 38 43.99	11 52 26.9	119.62	21	23 4 56.28	1 42 2.8	132.32
22	21 40 34.35	11 40 29.2	120.03	22	23 6 42.77	1 28 48.9	132.40
23	21 42 24.54	S. 11 28 29.0	120.47	23	23 8 29.28	S. 1 15 34.5	132.50
FRIDAY 14.				SUNDAY 16.			
0	21 44 14.57	S. 11 16 26.2	120.88	0	23 10 15.81	S. 1 2 19.5	132.58
1	21 46 4.45	11 4 20.9	121.30	1	23 12 2.36	0 49 4.0	132.67
2	21 47 54.17	10 52 13.1	121.68	2	23 13 48.94	0 35 48.0	132.73
3	21 49 43.74	10 40 3.0	122.10	3	23 15 35.55	0 22 31.6	132.80
4	21 51 33.16	10 27 50.4	122.48	4	23 17 22.19	S. 0 9 14.8	132.87
5	21 53 22.44	10 15 35.5	122.85	5	23 19 8.87	N. 0 4 2.4	132.90
6	21 55 11.58	10 3 18.4	123.23	6	23 20 55.60	0 17 19.8	132.95
7	21 57 0.58	9 50 59.0	123.60	7	23 22 42.37	0 30 37.5	133.00
8	21 58 49.45	9 38 37.4	123.97	8	23 24 29.19	0 43 55.5	133.02
9	22 0 38.18	9 26 13.6	124.30	9	23 26 16.07	0 57 13.6	133.05
10	22 2 26.79	9 13 47.8	124.67	10	23 28 3.01	1 10 31.9	133.07
11	22 4 15.28	9 1 19.8	124.98	11	23 29 50.01	1 23 50.3	133.07
12	22 6 3.64	8 48 49.9	125.32	12	23 31 37.09	1 37 8.7	133.08
13	22 7 51.89	8 36 18.0	125.65	13	23 33 24.24	1 50 27.2	133.07
14	22 9 40.02	8 23 44.1	125.97	14	23 35 11.46	2 3 45.6	133.07
15	22 11 28.05	8 11 8.3	126.27	15	23 36 58.76	2 17 4.0	133.03
16	22 13 15.97	7 58 30.7	126.57	16	23 38 46.15	2 30 22.2	133.02
17	22 15 3.78	7 45 51.3	126.87	17	23 40 33.63	2 43 40.3	133.00
18	22 16 51.50	7 33 10.1	127.15	18	23 42 21.21	2 56 58.3	132.95
19	22 18 39.12	7 20 27.2	127.43	19	23 44 8.89	3 10 16.0	132.90
20	22 20 26.65	7 7 42.6	127.70	20	23 45 56.67	3 23 33.4	132.85
21	22 22 14.10	6 54 56.4	127.97	21	23 47 44.56	3 36 50.5	132.80
22	22 24 1.46	6 42 8.6	128.23	22	23 49 32.57	3 50 7.3	132.73
23	22 25 48.74	6 29 19.2	128.48	23	23 51 20.69	4 3 23.7	132.65
24	22 27 35.94	S. 6 16 28.3		24	23 53 8.93	N. 4 16 39.6	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION:

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>MONDAY 17.</i>				<i>WEDNESDAY 19.</i>			
	^h ^m ^s	[°] ['] ["]	["]		^h ^m ^s	[°] ['] ["]	["]
0	23 53 8.93	N. 4 16 39.6	132.87	0	1 23 36.99	N. 14 29 29.0	119.1
1	23 54 57.30	4 29 55.0	132.48	1	1 25 36.78	14 41 23.9	118.6
2	23 56 45.80	4 43 9.9	132.40	2	1 27 36.93	14 53 15.6	118.1
3	23 58 34.43	4 56 24.3	132.28	3	1 29 37.42	15 5 4.3	117.5
4	0 0 23.21	5 9 38.0	132.18	4	1 31 38.28	15 16 49.7	117.0
5	0 2 12.13	5 22 51.1	132.05	5	1 33 39.50	15 28 31.9	116.4
6	0 4 1.20	5 36 3.4	131.95	6	1 35 41.08	15 40 10.8	115.9
7	0 5 50.42	5 49 15.1	131.80	7	1 37 43.03	15 51 46.2	115.3
8	0 7 39.80	6 2 25.9	131.67	8	1 39 45.36	16 3 18.1	114.7
9	0 9 29.34	6 15 35.9	131.52	9	1 41 48.06	16 14 46.5	114.1
10	0 11 19.05	6 28 45.0	131.37	10	1 43 51.15	16 26 11.3	113.5
11	0 13 8.93	6 41 53.2	131.20	11	1 45 54.62	16 37 32.4	112.8
12	0 14 58.99	6 55 0.4	131.03	12	1 47 58.48	16 48 49.7	112.2
13	0 16 49.23	7 8 6.6	130.85	13	1 50 2.74	17 0 3.1	111.6
14	0 18 39.65	7 21 11.7	130.67	14	1 52 7.39	17 11 12.7	110.9
15	0 20 30.26	7 34 15.7	130.48	15	1 54 12.45	17 22 18.2	110.2
16	0 22 21.06	7 47 18.6	130.28	16	1 56 17.91	17 33 19.7	109.5
17	0 24 12.07	8 0 20.3	130.07	17	1 58 23.78	17 44 17.0	108.8
18	0 26 3.27	8 13 20.7	129.85	18	2 0 30.06	17 55 10.1	108.1
19	0 27 54.69	8 26 19.8	129.62	19	2 2 36.76	18 5 58.9	107.4
20	0 29 46.32	8 39 17.5	129.38	20	2 4 43.88	18 16 43.3	106.6
21	0 31 38.17	8 52 13.8	129.15	21	2 6 51.42	18 27 23.3	105.9
22	0 33 30.23	9 5 8.7	128.90	22	2 8 59.39	18 37 58.7	105.1
23	0 35 22.53	N. 9 18 2.1	128.63	23	2 11 7.79	N. 18 48 29.6	104.3
<i>TUESDAY 18.</i>				<i>THURSDAY 20.</i>			
	^h ^m ^s	[°] ['] ["]	["]		^h ^m ^s	[°] ['] ["]	["]
0	0 37 15.05	N. 9 30 53.9	128.37	0	2 13 16.62	N. 18 58 55.7	103.5
1	0 39 7.81	9 43 44.1	128.10	1	2 15 25.89	19 9 17.1	102.7
2	0 41 0.81	9 56 32.7	127.80	2	2 17 35.59	19 19 33.6	101.9
3	0 42 54.06	10 9 19.5	127.52	3	2 19 45.74	19 29 45.2	101.0
4	0 44 47.55	10 22 4.6	127.20	4	2 21 56.33	19 39 51.7	100.2
5	0 46 41.31	10 34 47.8	126.90	5	2 24 7.37	19 49 53.1	99.3
6	0 48 35.32	10 47 29.2	126.58	6	2 26 18.87	19 59 49.4	98.4
7	0 50 29.59	11 0 8.7	126.25	7	2 28 30.81	20 9 40.3	97.6
8	0 52 24.13	11 12 46.2	125.90	8	2 30 43.20	20 19 25.9	96.6
9	0 54 18.94	11 25 21.6	125.55	9	2 32 56.05	20 29 6.0	95.7
10	0 56 14.04	11 37 54.9	125.20	10	2 35 9.36	20 38 40.5	94.8
11	0 58 9.41	11 50 26.1	124.83	11	2 37 23.13	20 48 9.4	93.8
12	1 0 5.07	12 2 55.1	124.45	12	2 39 37.36	20 57 32.6	92.8
13	1 2 1.02	12 15 21.8	124.07	13	2 41 52.06	21 6 49.9	91.8
14	1 3 57.27	12 27 46.2	123.67	14	2 44 7.22	21 16 1.4	90.9
15	1 5 53.81	12 40 8.2	123.27	15	2 46 22.85	21 25 6.8	89.8
16	1 7 50.67	12 52 27.8	122.83	16	2 48 38.95	21 34 6.1	88.7
17	1 9 47.83	13 4 44.8	122.42	17	2 50 55.52	21 42 59.3	87.8
18	1 11 45.30	13 16 59.3	121.98	18	2 53 12.57	21 51 46.1	86.7
19	1 13 43.09	13 29 11.2	121.53	19	2 55 30.09	22 0 26.6	85.6
20	1 15 41.21	13 41 20.4	121.07	20	2 57 48.07	22 9 0.7	84.5
21	1 17 39.65	13 53 26.8	120.62	21	3 0 6.54	22 17 28.2	83.4
22	1 19 38.43	14 5 30.5	120.12	22	3 2 25.48	22 25 49.0	82.3
23	1 21 37.54	14 17 31.2	119.63	23	3 4 44.89	22 34 3.1	81.2
24	1 23 36.99	N. 14 29 29.0		24	3 7 4.70	N. 22 42 10.4	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>FRIDAY 21.</i>				<i>SUNDAY 23.</i>			
	h m s	° ' "	"		h m s	° ' "	"
0	3 7 4.79	N.22 42 10.4	80.07	0	5 7 39.08	N.26 27 20.4	6.70
1	3 9 25.16	22 50 10.8	78.88	1	5 10 18.73	26 28 0.6	4.87
2	3 11 46.01	22 58 4.1	77.72	2	5 12 58.63	26 28 29.8	3.00
3	3 14 7.33	23 5 50.4	76.50	3	5 15 38.77	26 28 47.8	1.15
4	3 16 29.13	23 13 29.4	75.28	4	5 18 19.13	26 28 54.7	0.73
5	3 18 51.40	23 21 1.1	74.05	5	5 20 59.71	26 28 50.3	2.60
6	3 21 14.15	23 28 25.4	72.80	6	5 23 40.50	26 28 34.7	4.47
7	3 23 37.37	23 35 42.2	71.53	7	5 26 21.48	26 28 7.9	6.38
8	3 26 1.07	23 42 51.4	70.23	8	5 29 2.65	26 27 29.6	8.25
9	3 28 25.23	23 49 52.8	68.95	9	5 31 44.00	26 26 40.1	10.17
10	3 30 49.86	23 56 46.5	67.63	10	5 34 25.52	26 25 39.1	12.08
11	3 33 14.96	24 3 32.3	66.30	11	5 37 7.19	26 24 26.6	13.98
12	3 35 40.53	24 10 10.1	64.95	12	5 39 49.02	26 23 2.7	15.92
13	3 38 6.56	24 16 39.8	63.58	13	5 42 30.98	26 21 27.2	17.83
14	3 40 33.06	24 23 1.3	62.20	14	5 45 13.07	26 19 40.2	19.75
15	3 43 0.01	24 29 14.5	60.82	15	5 47 55.27	26 17 41.7	21.70
16	3 45 27.42	24 35 19.4	59.40	16	5 50 37.58	26 15 31.5	23.62
17	3 47 55.29	24 41 15.8	57.97	17	5 53 19.99	26 13 9.8	25.53
18	3 50 23.61	24 47 3.6	56.53	18	5 56 2.48	26 10 36.6	27.48
19	3 52 52.37	24 52 42.8	55.07	19	5 58 45.04	26 7 51.7	29.42
20	3 55 21.58	24 58 13.2	53.60	20	6 1 27.67	26 4 55.2	31.35
21	3 57 51.22	25 3 34.8	52.10	21	6 4 10.34	26 1 47.1	33.28
22	4 0 21.31	25 8 47.4	50.62	22	6 6 53.07	25 58 27.4	35.22
23	4 2 51.82	N.25 13 51.1	49.08	23	6 9 35.82	N.25 54 56.1	37.15
<i>SATURDAY 22.</i>				<i>MONDAY 24.</i>			
0	4 5 22.77	N.25 18 45.6	47.57	0	6 12 18.60	N.25 51 13.2	39.08
1	4 7 54.14	25 23 31.0	46.00	1	6 15 1.39	25 47 18.7	41.00
2	4 10 25.93	25 28 7.0	44.45	2	6 17 44.18	25 43 12.7	42.95
3	4 12 58.13	25 32 33.7	42.87	3	6 20 26.95	25 38 55.0	44.87
4	4 15 30.74	25 36 50.9	41.28	4	6 23 9.71	25 34 25.8	46.78
5	4 18 3.76	25 40 58.6	39.67	5	6 25 52.43	25 29 45.1	48.72
6	4 20 37.17	25 44 56.6	38.05	6	6 28 35.12	25 24 52.8	50.62
7	4 23 10.97	25 48 44.9	36.40	7	6 31 17.75	25 19 49.1	52.55
8	4 25 45.16	25 52 23.3	34.77	8	6 34 0.33	25 14 33.8	54.43
9	4 28 19.73	25 55 51.9	33.10	9	6 36 42.83	25 9 7.2	56.35
10	4 30 54.67	25 59 10.5	31.42	10	6 39 25.25	25 3 29.1	58.25
11	4 33 29.99	26 2 19.0	29.73	11	6 42 7.59	24 57 39.6	60.13
12	4 36 5.66	26 5 17.4	28.02	12	6 44 49.82	24 51 38.8	62.03
13	4 38 41.69	26 8 5.5	26.32	13	6 47 31.94	24 45 26.6	63.90
14	4 41 18.06	26 10 43.4	24.58	14	6 50 13.94	24 39 3.2	65.78
15	4 43 54.77	26 13 10.9	22.83	15	6 52 55.82	24 32 28.5	67.63
16	4 46 31.81	26 15 27.9	21.08	16	6 55 37.56	24 25 42.7	69.48
17	4 49 9.17	26 17 34.4	19.33	17	6 58 19.15	24 18 45.8	71.32
18	4 51 46.85	26 19 30.4	17.55	18	7 1 0.58	24 11 37.9	73.15
19	4 54 24.84	26 21 15.7	15.77	19	7 3 41.85	24 4 18.9	74.97
20	4 57 3.12	26 22 50.3	13.97	20	7 6 22.95	23 56 49.1	76.78
21	4 59 41.70	26 24 14.1	12.17	21	7 9 3.87	23 49 8.1	78.58
22	5 2 20.55	26 25 27.1	10.35	22	7 11 44.60	23 41 16.1	80.37
23	5 4 59.68	26 26 29.2	8.53	23	7 14 25.14	23 33 1.1	82.15

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
TUESDAY 25.				THURSDAY 27.			
0	7 17 5 46	N. 23 25 1 6	83 92	0	9 19 38 71	N. 13 53 4 9	148 33
1	7 19 45 57	23 16 38 1	86 67	1	9 22 3 72	13 38 14 9	149 18
2	7 22 25 47	23 8 4 1	87 40	2	9 24 28 39	13 23 19 8	149 38
3	7 25 5 14	22 59 19 7	89 13	3	9 26 52 72	12 8 19 9	150 74
4	7 27 44 57	22 50 24 9	90 23	4	9 29 16 72	12 53 15 2	151 57
5	7 30 23 76	22 41 19 9	92 55	5	9 31 40 39	12 38 5 8	152 36
6	7 33 2 70	22 32 4 6	94 22	6	9 34 3 73	12 22 52 0	153 05
7	7 35 41 39	22 22 39 3	95 30	7	9 36 26 75	12 7 33 7	153 71
8	7 38 19 82	22 13 3 9	97 53	8	9 38 49 44	11 52 11 3	154 43
9	7 40 57 99	22 3 18 7	99 20	9	9 41 11 81	11 36 44 7	155 21
10	7 43 35 88	21 53 23 5	100 20	10	9 43 33 86	11 21 14 1	155 77
11	7 46 13 50	21 43 18 7	102 42	11	9 45 55 59	11 5 39 7	156 23
12	7 48 50 84	21 33 4 2	104 02	12	9 48 17 01	10 50 1 5	156 37
13	7 51 27 89	21 22 40 1	105 59	13	9 50 38 12	10 34 19 7	157 53
14	7 54 4 64	21 12 6 6	107 15	14	9 52 58 92	10 18 34 5	158 10
15	7 56 41 09	21 1 23 7	108 67	15	9 55 19 43	10 2 45 9	158 42
16	7 59 17 25	20 50 31 7	110 22	16	9 57 39 63	9 46 54 1	159 15
17	8 1 53 10	20 39 30 4	111 70	17	9 59 59 53	9 30 59 2	159 63
18	8 4 28 64	20 28 20 2	112 19	18	10 2 19 14	9 15 1 4	160 19
19	8 7 3 86	20 17 1 1	114 67	19	10 4 38 46	8 59 0 7	160 53
20	8 9 38 77	20 5 33 1	116 10	20	10 6 57 49	8 42 57 4	161 00
21	8 12 13 35	19 53 56 5	117 52	21	10 9 16 24	8 26 51 4	161 28
22	8 14 47 61	19 42 11 3	118 95	22	10 11 34 71	8 10 43 1	161 78
23	8 17 21 54	N. 19 30 17 6	120 32	23	10 13 52 91	N. 7 54 32 4	162 15
WEDNESDAY 26.				FRIDAY 28.			
0	8 19 55 14	N. 19 18 15 6	121 70	0	10 16 10 83	N. 7 38 19 5	162 48
1	8 22 28 41	19 6 5 4	123 05	1	10 18 28 49	7 22 4 6	162 82
2	8 25 1 34	18 53 47 1	124 38	2	10 20 45 88	7 5 47 7	163 12
3	8 27 33 94	18 41 20 8	125 68	3	10 23 3 02	6 49 29 0	163 38
4	8 30 6 19	18 28 46 7	126 98	4	10 25 19 50	6 33 8 7	163 67
5	8 32 38 11	18 16 4 8	128 25	5	10 27 36 53	6 16 46 7	163 90
6	8 35 9 68	18 3 15 3	129 50	6	10 29 52 92	6 0 23 3	164 18
7	8 37 40 91	17 50 18 3	130 73	7	10 32 9 06	5 43 58 5	164 33
8	8 40 11 79	17 37 13 9	131 93	8	10 34 24 96	5 27 32 5	164 32
9	8 42 42 33	17 24 2 3	133 12	9	10 36 40 63	5 11 5 4	164 68
10	8 45 12 52	17 10 43 6	134 30	10	10 38 56 07	4 54 37 3	164 32
11	8 47 42 36	16 57 17 8	135 43	11	10 41 11 29	4 38 8 4	164 96
12	8 50 11 86	16 43 45 2	136 57	12	10 43 26 28	4 21 38 7	165 07
13	8 52 41 01	16 30 5 8	137 67	13	10 45 41 06	4 5 8 3	165 13
14	8 55 9 80	16 16 19 8	138 75	14	10 47 55 63	3 48 37 5	165 22
15	8 57 38 25	16 2 27 3	139 80	15	10 50 9 98	3 32 6 2	165 27
16	9 0 6 35	15 48 28 5	140 85	16	10 52 24 14	3 15 31 6	165 30
17	9 2 34 10	15 34 23 4	141 85	17	10 54 38 10	2 59 2 8	165 30
18	9 5 1 51	15 20 12 3	142 85	18	10 56 51 86	2 42 31 0	165 30
19	9 7 28 57	15 5 55 2	143 83	19	10 59 5 44	2 25 59 2	165 28
20	9 9 55 28	14 51 32 2	144 77	20	11 1 18 82	2 9 27 5	165 22
21	9 12 21 65	14 37 3 6	145 70	21	11 3 32 03	1 52 56 2	165 18
22	9 14 47 68	14 22 29 4	146 60	22	11 5 45 07	1 36 25 1	165 08
23	9 17 13 36	14 7 49 8	147 48	23	11 7 57 93	1 19 54 6	165 00
24	9 19 38 71	N. 13 53 4 9		24	11 10 10 62	N. 1 3 24 6	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{ms} .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{ms} .
SATURDAY 29.				MONDAY 31.			
0	11 10 10 ^h 62 ^m	N. 1 3 24 ^o 6 ⁿ	164 ^h 38 ^m	0	12 54 33 ^h 04 ^m	S. 11 26 11 ^o 4 ⁿ	141 ^h 58 ^m
1	11 12 23 ^h 15 ^m	0 46 55 ^o 3 ⁿ	164 ^h 73 ^m	1	12 56 43 ^h 00 ^m	11 40 20 ^o 9 ⁿ	140 ^h 78 ^m
2	11 14 35 ^h 53 ^m	0 30 26 ^o 9 ⁿ	164 ^h 60 ^m	2	12 58 53 ^h 01 ^m	11 54 25 ^o 6 ⁿ	139 ^h 97 ^m
3	11 16 47 ^h 76 ^m	N. 0 13 59 ^o 3 ⁿ	164 ^h 43 ^m	3	13 1 3 ^h 05 ^m	12 8 25 ^o 4 ⁿ	139 ^h 13 ^m
4	11 18 59 ^h 84 ^m	S. 0 2 27 ^o 3 ⁿ	164 ^h 25 ^m	4	13 3 13 ^h 15 ^m	12 22 20 ^o 2 ⁿ	138 ^h 30 ^m
5	11 21 11 ^h 77 ^m	0 18 52 ^o 8 ⁿ	164 ^h 05 ^m	5	13 5 23 ^h 30 ^m	12 36 10 ^o 0 ⁿ	137 ^h 47 ^m
6	11 23 23 ^h 57 ^m	0 35 17 ^o 1 ⁿ	163 ^h 83 ^m	6	13 7 33 ^h 50 ^m	12 49 54 ^o 8 ⁿ	136 ^h 60 ^m
7	11 25 35 ^h 23 ^m	0 51 46 ^o 1 ⁿ	163 ^h 60 ^m	7	13 9 43 ^h 76 ^m	13 3 34 ^o 4 ⁿ	135 ^h 73 ^m
8	11 27 46 ^h 76 ^m	1 8 1 ^o 7 ⁿ	163 ^h 35 ^m	8	13 11 54 ^h 08 ^m	13 17 8 ^o 8 ⁿ	134 ^h 87 ^m
9	11 29 58 ^h 17 ^m	1 24 21 ^o 8 ⁿ	163 ^h 08 ^m	9	13 14 4 ^h 46 ^m	13 30 38 ^o 0 ⁿ	133 ^h 97 ^m
10	11 32 9 ^h 46 ^m	1 40 40 ^o 3 ⁿ	162 ^h 40 ^m	10	13 16 14 ^h 90 ^m	13 44 1 ^o 8 ⁿ	133 ^h 07 ^m
11	11 34 20 ^h 63 ^m	1 56 57 ^o 1 ⁿ	162 ^h 52 ^m	11	13 18 25 ^h 41 ^m	13 57 20 ^o 2 ⁿ	132 ^h 17 ^m
12	11 36 31 ^h 70 ^m	2 13 12 ^o 2 ⁿ	162 ^h 20 ^m	12	13 20 36 ^h 00 ^m	14 10 33 ^o 2 ⁿ	131 ^h 25 ^m
13	11 38 42 ^h 66 ^m	2 29 25 ^o 4 ⁿ	161 ^h 87 ^m	13	13 22 46 ^h 66 ^m	14 23 40 ^o 7 ⁿ	130 ^h 32 ^m
14	11 40 53 ^h 51 ^m	2 45 36 ^o 6 ⁿ	161 ^h 53 ^m	14	13 24 57 ^h 39 ^m	14 36 42 ^o 6 ⁿ	129 ^h 38 ^m
15	11 43 4 ^h 28 ^m	3 1 45 ^o 8 ⁿ	161 ^h 18 ^m	15	13 27 8 ^h 20 ^m	14 49 38 ^o 9 ⁿ	128 ^h 43 ^m
16	11 45 14 ^h 94 ^m	3 17 52 ^o 9 ⁿ	160 ^h 78 ^m	16	13 29 19 ^h 09 ^m	15 2 29 ^o 5 ⁿ	127 ^h 48 ^m
17	11 47 25 ^h 52 ^m	3 33 57 ^o 6 ⁿ	160 ^h 43 ^m	17	13 31 30 ^h 07 ^m	15 15 14 ^o 4 ⁿ	126 ^h 52 ^m
18	11 49 36 ^h 02 ^m	3 50 0 ^o 1 ⁿ	160 ^h 00 ^m	18	13 33 41 ^h 13 ^m	15 27 53 ^o 5 ⁿ	125 ^h 53 ^m
19	11 51 46 ^h 44 ^m	4 6 0 ^o 1 ⁿ	159 ^h 58 ^m	19	13 35 52 ^h 27 ^m	15 40 26 ^o 7 ⁿ	124 ^h 55 ^m
20	11 53 56 ^h 78 ^m	4 21 57 ^o 6 ⁿ	159 ^h 18 ^m	20	13 38 3 ^h 51 ^m	15 52 54 ^o 0 ⁿ	123 ^h 57 ^m
21	11 56 7 ^h 05 ^m	4 37 52 ^o 5 ⁿ	158 ^h 72 ^m	21	13 40 14 ^h 83 ^m	16 5 15 ^o 4 ⁿ	122 ^h 55 ^m
22	11 58 17 ^h 25 ^m	4 53 44 ^o 8 ⁿ	158 ^h 23 ^m	22	13 42 26 ^h 25 ^m	16 17 30 ^o 7 ⁿ	121 ^h 55 ^m
23	12 0 27 ^h 40 ^m	S. 5 9 34 ^o 2 ⁿ	157 ^h 77 ^m	23	13 44 37 ^h 77 ^m	S. 16 29 40 ^o 0 ⁿ	120 ^h 52 ^m
SUNDAY 30.				TUESDAY, FEB. 1.			
0	12 2 37 ^h 48 ^m	S. 5 25 20 ^o 8 ⁿ	157 ^h 27 ^m	0	13 46 49 ^h 37 ^m	S. 16 41 43 ^o 1 ⁿ	
1	12 4 47 ^h 51 ^m	5 41 4 ^o 4 ⁿ	156 ^h 77 ^m				
2	12 6 57 ^h 50 ^m	5 56 45 ^o 0 ⁿ	156 ^h 35 ^m				
3	12 9 7 ^h 44 ^m	6 12 22 ^o 5 ⁿ	155 ^h 72 ^m				
4	12 11 17 ^h 33 ^m	6 27 56 ^o 8 ⁿ	155 ^h 17 ^m				
5	12 13 27 ^h 20 ^m	6 43 27 ^o 8 ⁿ	154 ^h 60 ^m				
6	12 15 37 ^h 03 ^m	6 58 55 ^o 4 ⁿ	154 ^h 05 ^m				
7	12 17 46 ^h 83 ^m	7 14 19 ^o 7 ⁿ	153 ^h 45 ^m				
8	12 19 56 ^h 61 ^m	7 29 40 ^o 4 ⁿ	152 ^h 85 ^m				
9	12 22 6 ^h 37 ^m	7 44 57 ^o 5 ⁿ	152 ^h 23 ^m				
10	12 24 16 ^h 12 ^m	8 0 10 ^o 9 ⁿ	151 ^h 62 ^m				
11	12 26 25 ^h 85 ^m	8 15 20 ^o 6 ⁿ	150 ^h 97 ^m				
12	12 28 35 ^h 57 ^m	8 30 26 ^o 4 ⁿ	150 ^h 32 ^m				
13	12 30 45 ^h 29 ^m	8 45 28 ^o 3 ⁿ	149 ^h 67 ^m				
14	12 32 55 ^h 01 ^m	9 0 26 ^o 8 ⁿ	148 ^h 98 ^m				
15	12 35 4 ^h 74 ^m	9 15 20 ^o 2 ⁿ	148 ^h 30 ^m				
16	12 37 14 ^h 48 ^m	9 30 10 ^o 0 ⁿ	147 ^h 60 ^m				
17	12 39 24 ^h 22 ^m	9 44 55 ^o 6 ⁿ	146 ^h 90 ^m				
18	12 41 33 ^h 98 ^m	9 59 37 ^o 0 ⁿ	146 ^h 17 ^m				
19	12 43 43 ^h 76 ^m	10 14 14 ^o 0 ⁿ	145 ^h 43 ^m				
20	12 45 53 ^h 56 ^m	10 28 46 ^o 6 ⁿ	144 ^h 68 ^m				
21	12 48 3 ^h 38 ^m	10 43 14 ^o 7 ⁿ	143 ^h 92 ^m				
22	12 50 13 ^h 23 ^m	10 57 38 ^o 2 ⁿ	143 ^h 17 ^m				
23	12 52 23 ^h 12 ^m	11 11 57 ^o 2 ⁿ	142 ^h 37 ^m				
24	12 54 33 ^h 04 ^m	S. 11 26 11 ^o 4 ⁿ					

PHASES OF THE MOON.

- ☾ Last Quarter - - 3 10 8^h 0^m
- New Moon - - - 11 4 15^h 0^m
- ☽ First Quarter - - 19 9 0^h 1^m
- Full Moon - - - 26 19 7^h

- ☾ Apogee - - - - -
- ☾ Perigee - - - - -

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.			P. L. of diff.	III ^h .			P. L. of diff.	VI ^h .			P. L. of diff.	IX ^h .			P. L. of diff.
		°	'	"		°	'	"		°	'	"		°	'	"	
1	Aldebaran W.	91	14	57	2266	93	1	46	2279	94	48	16	2293	96	34	26	2306
	Pollux W.	49	4	14	2243	50	51	38	2254	52	38	46	2266	54	25	36	2277
	Regulus W.	12	7	48	2318	13	53	22	2305	15	39	14	2300	17	25	13	2303
	Spica π E.	42	26	33	2219	40	38	34	2234	38	50	57	2247	37	3	40	2258
	Antares E.	88	7	55	2204	86	19	33	2218	84	31	32	2230	82	43	49	2241
SUN E.	121	31	6	2524	119	50	26	2538	118	10	5	2552	116	30	4	2565	
2	Aldebaran W.	105	20	7	2380	107	4	10	2396	108	47	51	2411	110	31	10	2426
	Pollux W.	63	15	20	2340	65	0	21	2354	66	45	1	2367	68	29	23	2380
	Regulus W.	26	13	33	2340	27	58	35	2351	29	43	20	2363	31	27	48	2374
	Spica π E.	28	13	2	2345	26	28	8	2363	24	43	40	2382	22	59	40	2400
	Antares E.	73	50	19	2313	72	4	39	2327	70	19	19	2341	68	34	19	2355
SUN E.	108	14	56	2640	106	36	55	2655	104	59	15	2671	103	21	56	2685	
3	Pollux W.	77	6	12	2451	78	48	34	2465	80	30	36	2479	82	12	19	2492
	Regulus W.	40	5	35	2441	41	48	12	2454	43	30	30	2467	45	12	29	2479
	Antares E.	59	54	34	2428	58	11	39	2442	56	29	4	2456	54	46	49	2470
	SUN E.	95	20	27	2764	93	45	12	2779	92	10	16	2794	90	35	40	2808
4	Pollux W.	90	26	2	2561	92	15	50	2575	93	55	19	2588	95	34	30	2601
	Regulus W.	53	37	41	2547	55	17	49	2561	56	57	38	2574	58	37	9	2587
	Antares E.	46	20	29	2540	44	40	11	2553	43	0	11	2566	41	20	29	2578
	SUN E.	82	47	33	2898	81	14	53	2898	79	42	31	2913	78	10	28	2927
5	Pollux W.	103	45	59	2666	105	23	25	2678	107	0	34	2690	108	37	27	2702
	Regulus W.	66	50	27	2648	68	28	17	2661	70	5	50	2672	71	43	8	2684
	Spica π W.	13	3	58	2761	14	39	17	2750	16	14	51	2744	17	50	32	2747
	Antares E.	33	6	24	2642	31	28	26	2654	29	50	44	2666	28	13	18	2677
	SUN E.	70	34	34	2995	69	4	15	3006	67	34	10	3020	66	4	22	3031
6	Regulus W.	79	45	54	2738	81	21	44	2747	82	57	21	2758	84	32	44	2769
	Spica π W.	25	48	21	2765	27	23	35	2772	28	58	39	2779	30	33	34	2789
	SUN E.	58	39	9	3092	57	10	49	3103	55	42	43	3114	54	14	50	3125
7	Regulus W.	92	26	30	2814	94	0	40	2824	95	34	37	2832	97	8	24	2840
	Spica π W.	38	25	39	2825	39	59	34	2834	41	33	18	2841	43	6	53	2848
	SUN E.	46	58	38	3176	45	32	0	3186	44	5	34	3194	42	39	18	3202
8	Spica π W.	50	52	23	2885	52	25	1	2892	53	57	30	2898	55	29	51	2905
	SUN E.	35	30	39	3248	34	5	26	3255	32	40	22	3263	31	15	27	3270
13	SUN W.	19	46	55	3461	21	8	3	3468	22	29	9	3464	23	50	13	3465
	α Pegasi E.	41	54	31	3446	40	33	5	3471	39	12	8	3498	37	51	42	3525
	α Arietis E.	82	38	18	3083	81	9	48	3086	79	41	21	3087	78	12	56	3089
	Aldebaran E.	114	51	42	3143	113	24	24	3144	111	57	8	3143	110	29	51	3143
14	SUN W.	30	35	15	3470	31	56	13	3470	33	17	11	3469	34	38	10	3469
	α Arietis E.	70	51	17	3095	69	23	1	3096	67	54	46	3095	66	26	30	3095
	Aldebaran E.	103	13	28	3143	101	46	11	3143	100	18	53	3143	98	51	35	3143
15	SUN W.	41	23	18	3462	42	44	25	3458	44	5	36	3456	45	26	49	3454
	α Arietis E.	59	5	8	3092	57	36	48	3090	56	8	26	3088	54	40	2	3087
	Aldebaran E.	91	34	40	3134	90	7	11	3131	88	39	39	3129	87	12	5	3126
16	SUN W.	52	13	55	3432	53	35	36	3426	54	57	23	3421	56	19	16	3415

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Noon.			P. L. of diff.			III ^b .			P. L. of diff.			VI ^b .			P. L. of diff.			IX ^b .			P. L. of diff.		
			°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"
16	α Arietis	E.	47	17	20	3073	43	48	37	3069	44	19	50	3065	42	50	57	3061	42	50	57	3061	75	29	7	3057
	Aldebaran	E.	79	53	18	3110	78	25	20	3105	76	57	16	3101	75	29	7	3097	75	29	7	3097	75	29	7	3097
17	SUN	W.	63	10	38	3377	64	33	21	3367	65	56	15	3353	67	19	19	3339	67	19	19	3339	67	19	19	3339
	Mars	W.	22	16	27	3358	23	39	32	3342	25	2	55	3326	26	26	37	3310	26	26	37	3310	26	26	37	3310
	α Arietis	E.	35	25	21	3040	33	55	58	3035	32	26	29	3031	30	56	55	3027	30	56	55	3027	30	56	55	3027
	Aldebaran	E.	68	6	47	3068	66	37	58	3061	65	9	0	3055	63	39	55	3051	63	39	55	3051	63	39	55	3051
	Pollux	E.	110	7	17	3020	108	37	29	3012	107	7	31	3002	105	37	21	2994	105	37	21	2994	105	37	21	2994
18	SUN	W.	74	17	38	3294	75	41	57	3282	77	6	30	3268	78	31	19	3254	78	31	19	3254	78	31	19	3254
	Fomalhaut	W.	47	41	37	3670	48	58	56	3624	50	17	4	3581	51	35	59	3535	51	35	59	3535	51	35	59	3535
	Mars	W.	33	29	22	3238	34	54	46	3224	36	20	27	3209	37	46	25	3193	37	46	25	3193	37	46	25	3193
	α Pegasi	W.	25	0	13	3921	26	13	12	3807	27	28	7	3706	28	44	48	3650	28	44	48	3650	28	44	48	3650
	Aldebaran	E.	56	12	17	3010	54	42	17	3002	53	12	7	2995	51	41	48	2989	51	41	48	2989	51	41	48	2989
	Pollux	E.	98	3	30	2941	96	32	3	2930	95	0	22	2918	93	28	26	2906	93	28	26	2906	93	28	26	2906
19	SUN	W.	85	39	28	3182	87	5	59	3166	88	32	49	3150	89	59	58	3134	89	59	58	3134	89	59	58	3134
	Fomalhaut	W.	58	21	12	3361	59	44	13	3330	61	7	50	3299	62	32	3	3257	62	32	3	3257	62	32	3	3257
	Mars	W.	45	0	52	3116	46	28	42	3099	47	56	53	3083	49	25	24	3067	49	25	24	3067	49	25	24	3067
	α Pegasi	W.	35	29	9	3296	36	53	25	3248	38	18	38	3203	39	44	44	3155	39	44	44	3155	39	44	44	3155
	Aldebaran	E.	44	7	48	2950	42	36	32	2944	41	5	9	2938	39	33	39	2932	39	33	39	2932	39	33	39	2932
	Pollux	E.	85	44	42	2889	84	11	5	2825	82	37	9	2810	81	2	54	2794	81	2	54	2794	81	2	54	2794
20	SUN	W.	97	20	54	3045	98	50	11	3026	100	19	51	3008	101	49	54	2990	101	49	54	2990	101	49	54	2990
	Fomalhaut	W.	69	41	33	3131	71	9	5	3106	72	37	7	3081	74	5	40	3056	74	5	40	3056	74	5	40	3056
	Mars	W.	56	53	22	2976	58	24	5	2957	59	55	12	2938	61	26	43	2920	61	26	43	2920	61	26	43	2920
	α Pegasi	W.	47	7	1	2981	48	37	37	2951	50	8	51	2920	51	40	45	2891	51	40	45	2891	51	40	45	2891
	Aldebaran	E.	31	55	8	2932	30	23	30	2939	28	52	1	2950	27	20	46	2930	27	20	46	2930	27	20	46	2930
	Pollux	E.	73	6	35	2716	71	30	16	2699	69	53	34	2681	68	16	29	2663	68	16	29	2663	68	16	29	2663
	Regulus	E.	110	1	29	2696	108	24	44	2680	106	47	37	2662	105	10	6	2644	105	10	6	2644	105	10	6	2644
	Regulus	E.	110	1	29	2696	108	24	44	2680	106	47	37	2662	105	10	6	2644	105	10	6	2644	105	10	6	2644
21	SUN	W.	109	26	18	2889	110	58	51	2869	112	31	50	2848	114	5	16	2827	114	5	16	2827	114	5	16	2827
	Fomalhaut	W.	81	35	46	2942	83	7	12	2920	84	39	6	2898	86	11	27	2876	86	11	27	2876	86	11	27	2876
	Mars	W.	69	10	29	2820	70	44	31	2799	72	19	0	2779	73	53	55	2759	73	53	55	2759	73	53	55	2759
	α Pegasi	W.	59	29	15	2755	61	4	42	2729	62	40	43	2704	64	17	17	2684	64	17	17	2684	64	17	17	2684
	α Arietis	W.	15	51	16	2731	17	27	14	2681	19	4	20	2638	20	42	24	2600	20	42	24	2600	20	42	24	2600
	Pollux	E.	60	5	16	2577	58	25	50	2559	56	45	59	2541	55	5	43	2523	55	5	43	2523	55	5	43	2523
	Regulus	E.	96	56	23	2553	95	16	23	2533	93	35	55	2514	91	55	2	2495	91	55	2	2495	91	55	2	2495
	Regulus	E.	96	56	23	2553	95	16	23	2533	93	35	55	2514	91	55	2	2495	91	55	2	2495	91	55	2	2495
22	SUN	W.	121	59	8	2724	123	35	16	2703	125	11	52	2683	126	48	55	2664	126	48	55	2664	126	48	55	2664
	Fomalhaut	W.	93	59	35	2784	95	34	24	2766	97	9	36	2751	98	45	8	2732	98	45	8	2732	98	45	8	2732
	Mars	W.	81	55	16	2657	83	32	54	2636	85	11	0	2616	86	49	33	2596	86	49	33	2596	86	49	33	2596
	α Pegasi	W.	72	28	11	2564	74	7	56	2541	75	48	12	2520	77	28	57	2499	77	28	57	2499	77	28	57	2499
	α Arietis	W.	29	4	14	2453	30	46	34	2428	32	29	29	2404	34	12	58	2381	34	12	58	2381	34	12	58	2381
	Pollux	E.	46	38	19	2438	44	55	38	2421	43	12	34	2405	41	29	6	2399	41	29	6	2399	41	29	6	2399
	Regulus	E.	83	23	53	2399	81	40	17	2380	79	56	14	2361	78	11	43	2342	78	11	43	2342	78	11	43	2342
23	Fomalhaut	W.	106	47	29	2675	108	24	43	2666	110	3	9	2659	111	39	44	2650	111	39	44	2650	111	39	44	2650
	Mars	W.	95	9	5	2499	96	50	20	2480	98	32	1	2462	100	14	7	2444	100	14	7	2444	100	14	7	2444
	α Pegasi	W.	85	59	57	2401	87	43	31	2382	89	27	32	2365	91	11	57	2348	91	11	57	2348	91	11	57	2348
	α Arietis	W.	42	58	25	2275	44	45	2	2255	46	32	8	2236	48	19	42	2218	48	19	42	2218	48	19	42	2218
	Aldebaran	W.	13	58	36	3538	15	18	18	3234	16	43	47	3025	18	13	29	2965	18	13	29	2965	18	13	29	2965
	Pollux	E.	32	46	42	2326	31	1	20	2317	29	15	46	2311	27	30	3	2307	27	30	3	2307	27	30	3	2307

MEAN TIME.
LUNAR DISTANCES.

the Month.	Star's Name and Position.	Midnight.	P. L. of diff.	XV ^h .	P. L. of diff.	XVIII ^h .	P. L. of diff.	XXI ^h .	P. L. of diff.
6	α Arietis E.	41 22 1	3057	39 52 59	3053	38 23 52	3048	36 54 39	3044
	Aldebaran E.	74 0 52	3091	72 32 31	3085	71 4 3	3080	69 35 29	3074
7	SUN W.	68 42 34	3339	70 6 1	3328	71 29 40	3316	72 53 33	3306
	Mars W.	27 50 36	3296	29 14 52	3282	30 39 25	3267	32 4 15	3253
	α Arietis E.	29 27 16	3023	27 57 32	3021	26 27 45	3018	24 57 55	3017
	Aldebaran E.	62 10 41	3041	60 41 19	3034	59 11 48	3026	57 42 7	3018
	Pollux E.	104 7 0	2984	102 36 27	2974	101 5 41	2963	99 34 42	2953
8	SUN W.	79 56 23	3242	81 21 43	3226	82 47 21	3212	84 13 16	3198
	Fomalhaut W.	52 55 39	3502	54 16 1	3464	55 37 5	3428	56 58 50	3395
	Mars W.	39 12 42	3179	40 39 16	3163	42 6 9	3148	43 33 21	3132
	α Pegasi W.	30 3 4	3539	31 22 45	3470	32 43 43	3405	34 5 54	3349
	Aldebaran E.	50 11 19	2980	48 40 41	2971	47 9 52	2964	45 38 54	2958
	Pollux E.	91 56 15	2892	90 23 47	2880	88 51 3	2866	87 18 1	2853
9	SUN W.	91 27 27	3117	92 55 16	3099	94 23 27	3081	95 52 0	3064
	Fomalhaut W.	63 56 51	3241	65 22 12	3212	66 48 -7	3185	68 14 34	3158
	Mars W.	50 54 16	3048	52 23 29	3031	53 53 4	3012	55 23 2	2994
	α Pegasi W.	41 11 40	3121	42 39 24	3084	44 7 53	3048	45 37 6	3014
	Aldebaran E.	38 2 2	2930	36 30 21	2928	34 58 37	2927	33 26 52	2928
	Pollux E.	79 28 20	2779	77 53 25	2764	76 18 10	2747	74 42 33	2731
20	SUN W.	103 20 22	2970	104 51 13	2949	106 22 30	2929	107 54 12	2910
	Fomalhaut W.	75 34 42	3032	77 4 15	3009	78 34 16	2985	80 4 47	2963
	Mars W.	62 58 38	2899	64 30 58	2880	66 3 43	2860	67 36 53	2840
	α Pegasi W.	53 13 15	2863	54 46 22	2835	56 20 5	2808	57 54 23	2782
	Aldebaran E.	25 49 53	2991	24 19 29	3023	22 49 45	3066	21 20 54	3126
	Pollux E.	66 39 2	2647	65 1 11	2630	63 22 57	2613	61 44 19	2594
	Regulus E.	103 32 11	2627	101 53 52	2608	100 15 8	2589	98 35 58	2571
21	SUN W.	115 39 8	2807	117 13 27	2786	118 48 13	2765	120 28 27	2744
	Fomalhaut W.	87 44 14	2858	89 17 27	2838	90 51 6	2820	92 25 8	2801
	Mars W.	73 29 17	2739	77 5 5	2717	78 41 22	2698	80 18 5	2677
	α Pegasi W.	65 54 23	2656	67 32 2	2632	69 10 13	2609	70 48 57	2586
	α Arietis W.	22 21 19	2566	24 1 1	2535	25 41 25	2506	27 22 30	2478
	Pollux E.	53 25 3	2507	51 43 59	2489	50 2 30	2471	48 20 36	2455
	Regulus E.	90 13 42	2477	88 31 56	2457	86 49 42	2438	85 7 1	2419
22	SUN W.	128 26 25	2642	130 4 23	2622	131 42 48	2602	133 21 41	2582
	Fomalhaut W.	100 21 1	2721	101 57 13	2708	103 33 42	2696	105 10 28	2684
	Mars W.	88 28 33	2576	90 8 1	2557	91 47 55	2537	93 28 17	2518
	α Pegasi W.	79 10 12	2478	80 51 56	2458	82 57 53	2438	84 16 49	2419
	α Arietis W.	35 57 0	2358	37 41 35	2337	39 39 39	2317	41 12 18	2295
	Pollux E.	39 45 17	2375	38 1 7	2362	36 36 36	2342	34 31 48	2337
	Regulus E.	76 26 45	2324	74 41 20	2305	72 41 20	2286	71 9 10	2268
23	Fomalhaut W.	113 17 27	2649	114 55 15	2647	116 11 11	2646	117 22 11	2649
	Mars W.	101 56 39	2427	103 32 35	2416	105 10 10	2405	106 39 39	2377
	α Pegasi W.	92 56 47	2332	94 42 1	2321	96 28 1	2310	97 59 1	2288
	α Arietis W.	50 7 43	2200	51 56 11	2189	53 11 11	2178	54 25 11	2149
	Aldebaran W.	19 46 33	2738	21 29 33	2727	22 48 33	2716	24 22 33	2486
Pollux E.	25 44 13	2306	23 44 13	2295	25 44 13	2284	27 44 13	2258	

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	LUNAR DISTANCES.						
		Noon.	P.L. of 6h.	III ^h .	P.L. of 6h.	VI ^h .	P.L. of 6h.	IX ^h .
23	Regulus E.	69° 22' 24"	2251	67° 35' 12"	2233	65° 47' 34"	2216	63° 59' 31"
24	Mars W.	108 50 46	2263	110 35 14	2249	112 20 4	2232	114 5 15
	α Pegasi W.	99 59 50	2275	101 46 27	2262	103 33 22	2251	105 20 33
	α Arietis W.	57 24 9	2133	59 14 18	2113	61 4 49	2104	62 55 42
	Aldebaran W.	26 21 55	2428	28 4 50	2377	29 48 57	2332	31 34 8
	Regulus E.	54 53 8	2122	53 2 42	2104	51 11 55	2094	49 20 47
	Spica ♀ E.	108 55 58	2121	107 5 31	2106	105 14 41	2092	103 23 30
25	α Arietis W.	72 15 9	2032	74 7 54	2021	76 0 55	2012	77 54 9
	Aldebaran W.	40 32 6	2160	42 21 34	2140	44 11 32	2122	46 1 56
	Regulus E.	40 0 39	2029	38 7 50	2022	36 14 50	2014	34 21 35
	Spica ♀ E.	94 2 46	2022	92 9 46	2013	90 16 32	2004	88 23 4
26	α Arietis W.	87 23 4	1977	89 17 15	1974	91 11 30	1972	93 5 49
	Aldebaran W.	55 19 7	2053	57 11 19	2046	59 3 42	2040	60 56 14
	Pollux W.	13 35 19	2257	15 19 56	2268	17 6 42	2266	18 55 0
	Regulus E.	24 53 53	1997	23 0 14	2000	21 6 39	2005	19 13 13
	Spica ♀ E.	78 53 7	1970	76 58 45	1967	75 4 18	1964	73 9 47
	Antares E.	124 39 6	1963	122 44 33	1960	120 49 55	1957	118 55 13
27	α Arietis W.	102 37 29	1976	104 31 41	1981	106 25 46	1985	108 19 44
	Aldebaran W.	70 20 1	2030	72 12 48	2032	74 5 32	2035	75 58 11
	Pollux W.	28 8 59	2058	30 1 3	2051	31 53 17	2046	33 45 39
	Spica ♀ E.	63 37 12	1970	61 42 50	1974	59 48 34	1978	57 54 25
	Antares E.	109 21 36	1961	107 27 1	1965	105 32 31	1969	103 38 8
28	Aldebaran W.	85 19 25	2073	87 11 6	2082	89 2 33	2092	90 53 44
	Pollux W.	43 7 26	2057	44 59 31	2064	46 51 25	2071	48 43 9
	Spica ♀ E.	48 26 16	2023	46 33 18	2033	44 40 36	2044	42 48 11
	Antares E.	94 8 36	2010	92 15 18	2021	90 23 16	2030	88 29 29
29	Aldebaran W.	100 5 11	2168	101 54 27	2183	103 43 20	2198	105 31 51
	Pollux W.	57 58 4	2134	59 48 11	2147	61 37 58	2161	63 27 24
	Regulus W.	20 56 37	2144	22 46 29	2153	24 36 7	2163	26 25 31
	Spica ♀ E.	33 31 3	2126	31 40 44	2143	29 50 51	2161	28 1 25
	Antares E.	79 10 2	2103	77 19 8	2118	75 28 36	2132	73 38 26
	Saturn E.	111 6 55	2140	109 16 56	2154	107 27 19	2168	105 38 4
	Jupiter E.	111 25 48	2169	109 36 34	2184	107 47 43	2198	105 59 13
	Sun E.	140 56 56	2412	139 13 38	2427	137 30 42	2443	135 48 8
30	Pollux W.	72 29 8	2252	74 16 18	2268	76 3 5	2285	77 49 26
	Regulus W.	35 27 48	2243	37 15 11	2259	39 2 11	2275	40 48 48
	Antares E.	64 33 26	2227	62 45 39	2244	60 58 17	2262	59 11 21
	Saturn E.	96 37 34	2264	94 50 41	2280	93 4 12	2298	91 18 9
	Jupiter E.	97 2 32	2294	95 16 24	2312	93 30 42	2328	91 45 24
	Sun E.	127 21 4	2544	125 40 52	2563	124 1 6	2581	122 21 45
31	Pollux W.	86 34 57	2289	88 18 47	2408	90 2 11	2425	91 45 10
	Regulus W.	49 35 44	2277	51 19 52	2294	53 3 36	2412	54 46 54
	Antares E.	50 23 3	2267	48 38 41	2285	46 54 45	2403	45 11 14
	Saturn E.	82 34 18	2404	80 50 49	2422	79 7 46	2441	77 25 9
	Jupiter E.	83 5 22	2426	81 22 39	2454	79 40 21	2472	77 58 29
	Sun E.	114 11 23	2696	112 34 37	2714	110 58 16	2733	109 22 20

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.	Midnight.	P.L. of diff.	XV ^h .		P.L. of diff.	XVIII ^h .		P.L. of diff.	XXI ^h .		P.I. of diff.
			°	'		°	'		°	'	
Regulus E.	62 11 2	2183	60	22 9	2167	58	32 52	2151	56	43 11	213
Mars W.	115 50 45	2307	117	36 34	2296	119	22 40	2284	121	9 3	227
α Pegasi W.	107 7 59	2232	108	55 39	2224	110	43 31	2217	112	31 34	221
α Arietis W.	64 46 57	2077	66	38 32	2064	68	30 26	2052	70	22 39	204
Aldebaran W.	33 20 14	2262	35	7 9	2232	36	54 49	2205	38	43 9	218
Regulus E.	47 29 20	2070	45	37 35	2059	43	45 32	2048	41	53 13	203
Spica η E.	101 31 59	2066	99	40 8	2054	97	47 58	2042	95	55 30	203
α Arietis W.	79 47 36	1998	81	41 14	1991	83	35 3	1986	85	29 0	198
Aldebaran W.	47 52 44	2093	49	43 54	2081	51	35 22	2070	53	27 7	206
Regulus E.	32 28 17	2003	30	34 48	1999	28	41 12	1997	26	47 33	199
Spica η E.	86 29 25	1989	84	35 34	1983	82	41 33	1978	80	47 24	197
α Arietis W.	95 0 11	1970	96	54 33	1970	98	48 54	1972	100	43 13	197
Aldebaran W.	62 48 52	2032	64	41 36	2030	66	34 23	2029	68	27 12	202
Pollux W.	20 44 28	2126	22	34 47	2101	24	25 44	2082	26	17 11	206
Regulus E.	17 20 0	2028	15	27 9	2048	13	34 49	2077	11	43 15	212
Spica η E.	71 15 15	1963	69	20 42	1963	67	26 10	1964	65	31 39	196
Antares E.	117 0 29	1955	115	5 44	1955	113	10 59	1956	111	16 16	195
α Arietis W.	110 13 34	1996	112	7 14	2004	114	0 42	2011	115	53 59	202
Aldebaran W.	77 50 44	2044	79	43 9	2050	81	35 25	2057	83	27 31	206
Pollux W.	35 38 4	2044	37	30 30	2045	39	22 54	2048	41	15 13	205
Spica η E.	56 0 25	1990	54	6 35	1997	52	12 56	2005	50	19 29	201
Antares E.	101 43 52	1980	99	49 46	1987	97	55 51	1994	96	2 7	200
Aldebaran W.	92 44 39	2115	94	35 16	2127	96	25 34	2140	98	15 33	215
Pollux W.	50 34 39	2090	52	25 54	2099	54	16 55	2111	56	7 38	212
Spica η E.	40 56 4	2068	39	4 16	2081	37	12 49	2096	35	21 44	211
Antares E.	86 36 58	2053	84	44 46	2064	82	52 52	2077	81	1 17	209
Aldebaran W.	107 19 57	2231	109	7 38	2248	110	54 54	2266	112	41 44	228
Pollux W.	65 16 30	2189	67	5 14	2204	68	53 35	2220	70	41 33	223
Regulus W.	28 14 38	2186	30	3 26	2200	31	51 54	2213	33	40 2	222
Spica η E.	26 12 27	2200	24	23 59	2221	22	36 2	2244	20	48 40	227
Antares E.	71 48 39	2163	69	59 15	2178	68	10 14	2194	66	21 38	221
Saturn E.	103 49 11	2198	102	0 41	2214	100	12 34	2231	98	24 52	224
Jupiter E.	104 11 6	2229	102	23 21	2245	100	36 1	2261	98	49 4	227
SUN E.	134 5 55	2474	132	24 6	2492	130	42 41	2510	129	1 41	252
Pollux W.	79 35 23	2319	81	20 55	2337	83	6 1	2354	84	50 42	237
Regulus W.	42 35 0	2308	44	20 48	2324	46	6 12	2342	47	51 10	235
Antares E.	57 24 49	2296	55	38 44	2313	53	53 4	2332	52	7 51	234
Saturn E.	89 32 32	2333	87	47 20	2350	86	38	2368	84	18 13	238
Jupiter E.	90 0 33	2364	88	16 6	2382	86	38	2400	84	48 31	241
SUN E.	120 42 49	2618	119	4 19	2637	117	37	2657	115	48 36	267
Pollux W.	93 27 43	2462	95	9 50	2479	96	38	2499	98	32 50	251
Regulus W.	56 29 48	2447	58	12 16	2465	59	38	2485	61	35 58	250
Antares E.	43 28 9	2439	41	45 30	2487	40	38	2507	38	21 27	249
Saturn E.	75 42 57	2477	74	1 11	2495	72	38	2517	70	38 54	253
Jupiter E.	76 17 3	2509	74	1 2	2528	72	38	2538	70	15 16	256
SUN E.	107 46 51	2772	106	47	2792	104	47	2813	102	2 54	283

CONFIGURATIONS OF THE SATELLITES OF JUPITER.

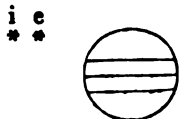
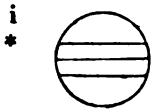
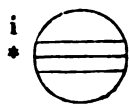
At 19^h, MEAN TIME.

Day of the Month.	West.	East.
18	4.	○ 1 2. 3.
19	4.	.2 3. ¹ ○
20	.4 3.	○ -1 ●
21	.4 .3 1.	○ 2'
22	.4 .2. ³	○ 1.
23	.2. ⁴ .1	○ .3
24		○ 1. 4 .2 3'
25	·1 ●	○ 2. 3. 4
26		2. 3. ¹ ○ .4
27	·2 ●	3. ○ -1 .4
28		.3 1. ○ 2' 4'
29		.3 2. ○ 1' 4.
30		.2 -1 ○ .3 4.
31		○ 1. 2 4. 3

This Table represents, at 19^h after *Mean Noon* of each day, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page; the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the numeral. A white circle (○) at the left or right hand of the page, denotes that the Satellite placed by the side of it is on the disc of Jupiter, and a black circle (●) that it is either *behind* the disc, or in the shadow, of Jupiter.

ECLIPSES OF THE SATELLITES OF JUPITER.*

SATELLITE.	Day of the Month.	Mean Time.	Sideral Time.	PHASE as seen in an inverting Telescope.
I.	18	^h 16 ^m 5 ^s 7·5	^h 11 ^m 57 ^s 41·7	Im.
	20	10 33 35·4	6 33 8·2	Im.
	22	5 1 59·6	1 8 31·0	Im.
	23	23 30 25·0	19 43 55·2	Im.
	25	17 58 49·0	14 19 17·8	Im.
	27	12 27 16·5	8 54 43·9	Im.
	29	6 55 39·6	3 30 5·6	Im.
	31	1 24 4·5	22 5 29·2	Im.
II.	20	16 7 49·9	12 8 17·6	Im.
	24	5 25 27·4	1 39 55·8	Im.
	27†	18 43 53·1	15 12 22·3	Im.
	31	8 1 26·9	4 43 56·9	Im.
III.	22	22 2 48·9	18 12 8·0	Im.
	30	2 1 5·9	22 38 40·1	Im.
IV.	24	4 32 51·0	0 47 10·8	Im.
	24	5 39 47·9	1 54 18·7	Em.



* The Satellites are not visible until the 18th day of this Month,
Jupiter being too near to the Sun.

APPROXIMATE SIDEREAL TIMES
OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER,*
AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.						TRANSITS OF SATELLITES.						TRANSITS OF SHADOWS.					
	Immersion.			Emersion.			Ingress.			Egress.			Ingress.			Egress.		
	d	h	m	d	h	m	d	h	m	d	h	m	d	h	m	d	h	m
I.				18	14	40	19	9	46	19	12	4	19	9	18	19	11	33
	In			20	9	18	21	4	24	21	6	41	21	3	53	21	6	10
				22	3	55	23	23	1	23	1	18	23	22	29	23	0	40
	the			24	22	32	24	17	38	24	19	56	24	17	4	24	19	27
				25	17	9	26	12	15	26	14	33	26	11	40	26	13	57
	Shadow.			27	11	47	28	6	53	28	9	10	28	6	15	28	8	33
			29	6	24	30	1	30	30	3	47	30	0	51	30	3	5	
			31	1	1	31	20	7	32	22	25	31	19	26	32	21	44	
II.	In the			20†	15	56	18	17	57	19	20	45	18	17	0	18	19	47
				24	5	34	22	7	35	22	10	23	22	6	31	22	9	10
	Shadow.			27	19	14	26	21	13	26	0	2	25	20	2	26	22	49
				31	8	52	29	10	50	29	18	40	29	9	33	29	12	24
III.	In the			23	23	28	19	6	2	19	9	13	19	4	7	19	7	15
	Shadow.			30	4	23	26	10	57	26	14	10	26	8	34	26	11	43
IV.	24	5	40	24	7	29												

* The Satellites are not visible until the 18th day of this Month,
Jupiter being too near to the Sun.

Day of the Month	For correcting the Places of the Fixed Stars. At Mean Midnight,				Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0 ^h .809526.	From Mean Noon of January 1.		
	Logarithm of						Days.	Day of the Year.	Fraction of the Year.
	A	B	C	D					
1	-0.5617	+1.3004	+9.4803	-0.6320	5 16 13.91	284	0	.000	
2	0.5988	1.2988	9.4856	0.6321	5 12 18.00	285	1	.003	
3	0.6329	1.2970	9.4908	0.6322	5 8 22.09	286	2	.005	
4	-0.6644	+1.2951	+9.4960	-0.6324	5 4 26.17	287	3	.008	
5	0.6936	1.2930	9.5011	0.6327	5 0 30.26	288	4	.011	
6	0.7208	1.2908	9.5061	0.6330	4 56 34.35	289	5	.014	
7	-0.7463	+1.2885	+9.5110	-0.6333	4 52 38.44	290	6	.016	
8	0.7703	1.2860	9.5158	0.6337	4 48 42.52	291	7	.019	
9	0.7929	1.2834	9.5205	0.6342	4 44 46.61	292	8	.022	
10	-0.8142	+1.2806	+9.5252	-0.6347	4 40 50.70	293	9	.025	
11	0.8344	1.2776	9.5298	0.6353	4 36 54.79	294	10	.027	
12	0.8536	1.2745	9.5343	0.6359	4 32 58.88	295	11	.030	
13	-0.8718	+1.2712	+9.5388	-0.6366	4 29 2.97	296	12	.033	
14	0.8891	1.2678	9.5431	0.6373	4 25 7.05	297	13	.036	
15	0.9057	1.2642	9.5474	0.6380	4 21 11.14	298	14	.038	
16	-0.9215	+1.2604	+9.5517	-0.6388	4 17 15.23	299	15	.041	
17	0.9366	1.2565	9.5558	0.6397	4 13 19.32	300	16	.044	
18	0.9511	1.2524	9.5599	0.6406	4 9 23.41	301	17	.047	
19	-0.9649	+1.2481	+9.5639	-0.6415	4 5 27.49	302	18	.049	
20	0.9782	1.2436	9.5678	0.6424	4 1 31.58	303	19	.052	
21	0.9910	1.2389	9.5717	0.6434	3 57 35.67	304	20	.055	
22	-1.0033	+1.2341	+9.5755	-0.6444	3 53 39.76	305	21	.058	
23	1.0151	1.2291	9.5792	0.6454	3 49 43.85	306	22	.060	
24	1.0264	1.2238	9.5829	0.6465	3 45 47.94	307	23	.063	
25	-1.0373	+1.2184	+9.5865	-0.6475	3 41 52.03	308	24	.066	
26	1.0479	1.2128	9.5901	0.6486	3 37 56.12	309	25	.068	
27	1.0580	1.2069	9.5936	0.6497	3 34 0.20	310	26	.071	
28	-1.0678	+1.2009	+9.5970	-0.6508	3 30 4.29	311	27	.074	
29	1.0772	1.1946	9.6003	0.6519	3 26 8.38	312	28	.077	
30	1.0863	1.1881	9.6036	0.6531	3 22 12.47	313	29	.079	
31	1.0950	1.1813	9.6069	0.6542	3 18 16.56	314	30	.082	
32	-1.1035	+1.1743	+9.6101	-0.6554	3 14 20.65	315	31	.085	

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, to be added to Apparent Time.	Diff. for 1 hr.			
		Apparent Right Ascension.	Diff. for 1 hour.	Apparent Declination.	Diff. for 1 hour.						
		h m s	s	° ' "	"	m s	m s	s			
Tues.	1	20 59 5	14	10° 170	S. 17 7 28	8	43	03	1 8 20	13 55 43	0 32
Wed.	2	21 3 9	23	10° 137	16 50 16	1	43	77	1 8 08	14 2 95	0 32
Thur.	3	21 7 12	52	10° 103	16 32 45	6	44	49	1 7 96	14 9 66	0 32
Frid.	4	21 11 15	00	10° 070	16 14 57	7	45	20	1 7 83	14 15 57	0 32
Sat.	5	21 15 16	69	10° 037	15 56 52	9	45	88	1 7 73	14 20 68	0 31
Sun.	6	21 19 17	57	10° 004	15 38 31	7	46	55	1 7 62	14 25 00	0 31
Mon.	7	21 23 17	66	9° 970	15 19 54	4	47	20	1 7 50	14 28 52	0 31
Tues.	8	21 27 16	94	9° 937	15 1 1	5	47	83	1 7 39	14 31 25	0 30
Wed.	9	21 31 15	43	9° 905	14 41 53	4	48	44	1 7 27	14 33 18	0 30
Thur.	10	21 35 13	14	9° 872	14 22 30	6	49	05	1 7 16	14 34 33	0 30
Frid.	11	21 39 10	07	9° 839	14 2 53	5	49	63	1 7 05	14 34 69	0 30
Sat.	12	21 43 6	21	9° 807	13 43 2	5	50	19	1 6 94	14 34 28	0 30
Sun.	13	21 47 1	58	9° 775	13 22 58	1	50	73	1 6 83	14 33 10	0 30
Mon.	14	21 50 56	18	9° 744	13 2 40	7	51	25	1 6 73	14 31 16	0 31
Tues.	15	21 54 50	03	9° 713	12 42 10	8	51	75	1 6 63	14 28 46	0 31
Wed.	16	21 58 43	13	9° 682	12 21 28	8	52	23	1 6 53	14 25 01	0 31
Thur.	17	22 2 35	49	9° 652	12 0 35	2	52	70	1 6 43	14 20 83	0 30
Frid.	18	22 6 27	13	9° 622	11 39 30	2	53	15	1 6 33	14 15 92	0 32
Sat.	19	22 10 18	05	9° 592	11 18 14	5	53	60	1 6 23	14 10 31	0 32
Sun.	20	22 14 8	28	9° 565	10 56 48	2	54	02	1 6 14	14 4 00	0 32
Mon.	21	22 17 57	84	9° 537	10 35 11	9	54	42	1 6 04	13 57 03	0 31
Tues.	22	22 21 46	73	9° 510	10 13 26	0	54	80	1 5 95	13 49 39	0 32
Wed.	23	22 25 34	98	9° 485	9 51 30	7	55	17	1 5 86	13 41 10	0 31
Thur.	24	22 29 22	61	9° 459	9 29 26	6	55	52	1 5 77	13 32 20	0 30
Frid.	25	22 33 9	63	9° 435	9 7 14	0	55	87	1 5 68	13 22 69	0 42
Sat.	26	22 36 56	07	9° 412	8 44 53	2	56	19	1 5 60	13 12 61	0 44
Sun.	27	22 40 41	95	9° 389	8 22 24	7	56	50	1 5 52	13 1 96	0 46
Mon.	28	22 44 27	29	9° 368	7 59 48	7	56	79	1 5 44	12 50 78	0 48
Tues.	29	22 48 12	11		S. 7 37 5	8			1 5 36	12 39 07	

* True Time of the Semidiameter passing may be found by subtracting 0^m 18 from it

AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S			Equation of Time, to be subtracted from Mean Time.	Sidereal Time.
		<i>Apparent</i> Right Ascension.	<i>Apparent</i> Declination.	Semidiam.*		
Tues.	1	h m s 20 59 2 ⁷ 77	S. 17° 7' 38 ⁷	16 14 ⁸	m s 13 55 ³⁵	h m s 20 45 7 ⁴²
Wed.	2	21 3 6 ⁸⁵	16 50 26 ²	16 14 ⁷	14 2 ⁸⁸	20 49 3 ⁹⁸
Thur.	3	21 7 10 ¹³	16 32 56 ⁰	16 14 ⁵	14 9 ⁶⁰	20 53 0 ⁵³
Frid.	4	21 11 12 ⁶¹	16 15 8 ⁴	16 14 ⁴	14 15 ⁵²	20 56 57 ⁰⁹
Sat.	5	21 15 14 ²⁸	15 57 3 ⁸	16 14 ²	14 20 ⁶⁴	21 0 53 ⁶⁵
Sun.	6	21 19 15 ¹⁶	15 38 42 ⁸	16 14 ⁰	14 24 ⁹⁶	21 4 50 ²⁰
Mon.	7	21 23 15 ²⁵	15 20 5 ⁷	16 13 ⁸	14 28 ⁴⁹	21 8 46 ⁷⁶
Tues.	8	21 27 14 ⁵³	15 1 13 ⁰	16 13 ⁷	14 31 ²²	21 12 43 ³¹
Wed.	9	21 31 13 ⁰³	14 42 5 ¹	16 13 ⁵	14 33 ¹⁶	21 16 39 ⁸⁷
Thur.	10	21 35 10 ⁷⁴	14 22 42 ⁴	16 13 ³	14 34 ³²	21 20 36 ⁴²
Frid.	11	21 39 7 ⁶⁷	14 3 5 ⁴	16 13 ¹	14 34 ⁶⁹	21 24 32 ⁹⁸
Sat.	12	21 43 3 ⁸²	13 43 14 ⁶	16 12 ⁹	14 34 ²⁹	21 28 29 ⁵³
Sun.	13	21 46 59 ²⁰	13 23 10 ³	16 12 ⁷	14 33 ¹²	21 32 26 ⁰⁹
Mon.	14	21 50 53 ⁸²	13 2 53 ⁰	16 12 ⁵	14 31 ¹⁸	21 36 22 ⁶⁴
Tues.	15	21 54 47 ⁶⁸	12 42 23 ²	16 12 ³	14 28 ⁴⁹	21 40 19 ²⁰
Wed.	16	21 58 40 ⁸⁰	12 21 41 ³	16 12 ¹	14 25 ⁰⁵	21 44 15 ⁷⁵
Thur.	17	22 2 33 ¹⁸	12 0 47 ⁷	16 11 ⁹	14 20 ⁸⁷	21 48 12 ³¹
Frid.	18	22 6 24 ⁸³	11 39 42 ⁸	16 11 ⁷	14 15 ⁹⁷	21 52 8 ⁸⁶
Sat.	19	22 10 15 ⁷⁸	11 18 27 ¹	16 11 ⁵	14 10 ³⁶	21 56 5 ⁴²
Sun.	20	22 14 6 ⁰⁴	10 57 0 ⁸	16 11 ³	14 4 ⁰⁷	22 0 1 ⁹⁷
Mon.	21	22 17 55 ⁶²	10 35 24 ⁵	16 11 ¹	13 57 ¹⁰	22 3 58 ⁵²
Tues.	22	22 21 44 ⁵⁴	10 13 38 ⁵	16 10 ⁸	13 49 ⁴⁶	22 7 55 ⁰⁸
Wed.	23	22 25 32 ⁸²	9 51 43 ³	16 10 ⁶	13 41 ¹⁸	22 11 51 ⁶³
Thur.	24	22 29 20 ⁴⁷	9 29 39 ¹	16 10 ⁴	13 32 ²⁹	22 15 48 ¹⁹
Frid.	25	22 33 7 ⁵²	9 7 26 ⁴	16 10 ¹	13 22 ⁷⁸	22 19 44 ⁷⁴
Sat.	26	22 36 53 ⁹⁹	8 45 5 ⁶	16 9 ⁹	13 12 ⁷⁰	22 23 41 ²⁹
Sun.	27	22 40 39 ⁹¹	8 22 36 ⁹	16 9 ⁷	13 2 ⁰⁶	22 27 37 ⁸⁵
Mon.	28	22 44 25 ²⁸	8 0 0 ⁹	16 9 ⁴	12 50 ⁸⁸	22 31 34 ⁴⁰
Tues.	29	22 48 10 ¹³	S. 7° 37' 17 ⁸	16 9 ²	12 39 ¹⁸	22 35 30 ⁹⁶

* diameter for Apparent Noon may be assumed the same as that for Mean Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S			
	Longitude.	Latitude.		Semidiameter.		Horizontal Parallels	
	Noon.	Noon.	Noon.	Noon.	Midnight.	Noon.	Midnight.
1	312 17 37 ^o 0	S.0 ⁿ 21	9 ^o 9937425	15 45 ['] 8	15 38 ['] 4	57 51 ['] 0	57 23 ['] 1
2	313 18 27 ^o 6	0 ⁿ 21	9 ^o 9938140	15 31 ['] 3	15 24 ['] 6	56 57 ['] 6	56 33 ['] 1
3	314 19 17 ^o 3	0 ⁿ 19	9 ^o 9938875	15 18 ['] 3	15 12 ['] 5	56 9 ['] 9	55 48 ['] 1
4	315 20 6 ^o 1	0 ⁿ 12	9 ^o 9939628	15 7 ['] 3	15 2 ['] 5	55 29 ['] 4	55 11 ['] 1
5	316 20 54 ^o 0	S.0 ⁿ 04	9 ^o 9940397	14 58 ['] 3	14 54 ['] 6	54 56 ['] 5	54 42 ['] 1
6	317 21 40 ^o 8	N.0 ⁿ 07	9 ^o 9941182	14 51 ['] 4	14 48 ['] 7	54 31 ['] 3	54 21 ['] 1
7	318 22 26 ^o 6	0 ⁿ 20	9 ^o 9941980	14 46 ['] 4	14 44 ['] 6	54 12 ['] 9	54 6 ['] 1
8	319 23 11 ^o 2	0 ⁿ 34	9 ^o 9942790	14 43 ['] 1	14 42 ['] 0	54 0 ['] 7	53 56 ['] 7
9	320 23 54 ^o 5	0 ⁿ 47	9 ^o 9943611	14 41 ['] 3	14 41 ['] 0	53 54 ['] 2	53 52 ['] 9
10	321 24 36 ^o 6	0 ⁿ 60	9 ^o 9944444	14 41 ['] 0	14 41 ['] 3	53 52 ['] 9	53 54 ['] 2
11	322 25 17 ^o 2	0 ⁿ 72	9 ^o 9945287	14 42 ['] 0	14 43 ['] 1	53 56 ['] 8	54 0 ['] 1
12	323 25 56 ^o 3	0 ⁿ 82	9 ^o 9946141	14 44 ['] 5	14 46 ['] 3	54 5 ['] 8	54 12 ['] 6
13	324 26 33 ^o 8	0 ⁿ 90	9 ^o 9947006	14 48 ['] 6	14 51 ['] 3	54 20 ['] 9	54 30 ['] 7
14	325 27 9 ^o 7	0 ⁿ 96	9 ^o 9947882	14 54 ['] 4	14 57 ['] 9	54 42 ['] 1	54 35 ['] 1
15	326 27 43 ^o 8	0 ⁿ 98	9 ^o 9948770	15 2 ['] 0	15 6 ['] 6	55 10 ['] 0	55 26 ['] 1
16	327 28 16 ^o 1	0 ⁿ 97	9 ^o 9949670	15 11 ['] 7	15 17 ['] 3	55 45 ['] 5	56 6 ['] 2
17	328 28 46 ^o 5	0 ⁿ 94	9 ^o 9950583	15 23 ['] 4	15 29 ['] 8	56 28 ['] 5	56 52 ['] 3
18	329 29 15 ^o 1	0 ⁿ 87	9 ^o 9951512	15 36 ['] 7	15 43 ['] 9	57 17 ['] 6	57 44 ['] 1
19	330 29 41 ^o 7	0 ⁿ 77	9 ^o 9952455	15 51 ['] 4	15 59 ['] 0	58 11 ['] 4	58 39 ['] 7
20	331 30 6 ^o 5	0 ⁿ 67	9 ^o 9953413	16 6 ['] 4	16 13 ['] 7	59 6 ['] 5	59 33 ['] 1
21	332 30 29 ^o 4	0 ⁿ 55	9 ^o 9954389	16 20 ['] 5	16 26 ['] 9	59 58 ['] 3	60 21 ['] 5
22	333 30 50 ^o 4	0 ⁿ 41	9 ^o 9955383	16 32 ['] 3	16 36 ['] 9	60 41 ['] 5	60 58 ['] 2
23	334 31 9 ^o 5	0 ⁿ 28	9 ^o 9956395	16 40 ['] 3	16 42 ['] 5	61 10 ['] 7	61 19 ['] 0
24	335 31 26 ^o 8	0 ⁿ 15	9 ^o 9957426	16 43 ['] 4	16 42 ['] 9	61 22 ['] 1	61 20 ['] 4
25	336 31 42 ^o 3	N.0 ⁿ 04	9 ^o 9958475	16 41 ['] 1	16 38 ['] 0	61 13 ['] 6	61 2 ['] 3
26	337 31 56 ^o 1	S.0 ⁿ 05	9 ^o 9959542	16 33 ['] 6	16 28 ['] 2	60 46 ['] 2	60 26 ['] 4
27	338 32 8 ^o 2	0 ⁿ 11	9 ^o 9960627	16 21 ['] 9	16 14 ['] 8	60 3 ['] 2	59 37 ['] 3
28	339 32 18 ^o 7	0 ⁿ 15	9 ^o 9961728	16 7 ['] 2	15 59 ['] 3	59 9 ['] 3	58 48 ['] 2
29	340 32 27 ^o 5	S.0 ⁿ 15	9 ^o 9962844	15 51 ['] 2	15 43 ['] 2	58 10 ['] 5	57 41 ['] 1

MEAN TIME.

Day of the Month.		THE MOON'S														
		Longitude.				Latitude.				Age.		Meridian				
		Noon.		Midnight.		Noon.		Midnight.		Noon.	Passage.					
		^o	[']	["]	^o	[']	["]	^o	[']	["]	^o	[']	["]	^d	^h	^m
es.	1	210	45	32.5	217	28	49.8	S.5	17	15.0	S.5	14	27.9	20.8	17	37.8
ed.	2	224	5	46.7	230	36	43.9	5	7	31.4	4	56	42.1	21.8	18	29.6
aur.	3	237	2	4.6	243	28	17.1	4	42	17.6	4	24	36.6	22.8	19	22.4
rid.	4	249	37	49.5	255	49	11.2	4	3	58.2	3	40	42.2	23.8	20	15.2
at.	5	261	56	52.1	268	1	21.6	3	15	7.3	2	47	33.3	24.8	21	7.2
un.	6	274	3	7.5	280	2	37.4	2	18	19.4	1	47	45.8	25.8	21	57.3
on.	7	286	0	15.8	291	56	26.6	1	16	11.1	S.0	43	56.0	26.8	22	44.9
ues.	8	297	51	31.4	303	45	50.5	S.0	11	19.4	N.0	21	19.0	27.8	23	29.9
Wed.	9	309	39	42.2	315	33	23.5	N.0	53	39.9	1	25	23.3	28.8		6
Thur.	10	321	27	10.2	327	21	17.9	1	56	10.8	2	25	43.5	0.0	0	12.5
rid.	11	333	16	1.1	339	11	33.7	2	53	43.7	3	19	54.0	1.0	0	53.5
at.	12	345	8	10.3	351	6	5.9	3	43	27.5	4	5	38.7	2.0	1	33.5
Sun.	13	357	5	36.5	3	6	58.2	4	24	43.2	4	40	56.8	3.0	2	13.5
Mon.	14	9	10	29.1	15	16	28.6	4	54	7.8	5	4	3.9	4.0	2	54.4
Tues.	15	21	25	17.5	27	37	17.2	5	10	35.2	5	13	32.2	5.0	3	37.3
Wed.	16	33	52	51.7	40	12	24.6	5	12	49.5	5	8	18.9	6.0	4	23.2
Thur.	17	46	36	21.1	53	5	3.9	4	59	56.1	4	47	29.3	7.0	5	13.0
Frid.	18	59	38	58.0	66	18	24.7	4	31	28.0	4	11	25.0	8.0	6	7.1
Sat.	19	73	3	42.9	79	55	6.8	3	47	35.8	3	20	11.0	9.0	7	5.1
Sun.	20	86	52	46.5	93	56	44.9	2	49	24.8	2	15	36.8	10.0	8	5.9
Mon.	21	101	6	66.2	108	23	7.3	1	39	12.4	N.1	0	43.2	11.0	9	7.3
Tues.	22	115	44	52.7	123	11	36.8	N.0	20	45.5	S.0	19	57.7	12.0	10	7.3
Wed.	23	130	42	32.2	138	16	43.1	S.1	0	42.2	1	40	37.1	13.0	11	4.9
Thur.	24	145	53	1.8	153	30	15.9	2	18	53.3	2	54	42.5	14.0	11	59.7
Frid.	25	161	7	6.1	168	48	15.1	3	27	20.8	3	56	9.4	15.0	12	52.4
Sat.	26	176	14	25.7	183	42	28.2	4	20	38.2	4	40	23.8	16.0	13	44.1
Sun.	27	191	5	20.2	198	22	10.2	4	55	13.8	5	5	2.8	17.0	14	35.7
Mon.	28	205	32	19.4	212	35	21.7	5	9	53.2	5	9	55.0	18.0	15	27.9
Tues.	29	219	21	2.2	226	19	18.6	S.5	5	22.9	S.4	56	34.6	19.0	16	21.2

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>TUESDAY 1.</i>				<i>THURSDAY 3.</i>			
0	h m s 13 46 49 ³⁷	S. 16 41 43 ¹	119 ⁵⁰	0	h m s 15 34 13 ⁵⁸	S. 24 5 18 ²	61 ⁷
1	13 49 1 ⁰⁸	16 53 40 ¹	118 ⁴⁵	1	15 36 30 ³⁰	24 11 28 ⁶	60 ²
2	13 51 12 ⁸⁹	17 5 30 ⁸	117 ⁴²	2	15 38 47 ¹⁰	24 17 30 ⁹	59 ⁷
3	13 53 24 ⁸⁰	17 17 15 ³	116 ³⁵	3	15 41 3 ⁹⁶	24 23 25 ²	57 ⁷
4	13 55 36 ⁸²	17 28 53 ⁴	115 ²⁸	4	15 43 20 ⁹⁰	24 29 11 ⁵	56 ⁷
5	13 57 48 ⁹⁴	17 40 25 ¹	114 ²³	5	15 45 37 ⁹⁰	24 34 49 ⁷	55 ⁷
6	14 0 1 ¹⁷	17 51 50 ⁵	113 ¹⁸	6	15 47 54 ⁹⁷	24 40 19 ⁸	53 ⁷
7	14 2 13 ⁵⁰	18 3 9 ³	112 ⁰⁵	7	15 50 12 ¹⁰	24 45 41 ⁸	52 ⁷
8	14 4 25 ⁹⁴	18 14 21 ⁶	110 ⁰⁵	8	15 52 29 ²⁹	24 50 55 ⁷	50 ⁷
9	14 6 38 ⁴⁹	18 25 27 ³	109 ⁸⁵	9	15 54 46 ⁵³	24 56 1 ⁴	49 ⁷
10	14 8 51 ¹⁴	18 36 26 ⁴	108 ⁷⁵	10	15 57 3 ⁸²	25 0 59 ⁰	48 ⁷
11	14 11 3 ⁹¹	18 47 18 ⁹	107 ⁶²	11	15 59 21 ¹⁷	25 5 48 ⁴	46 ⁷
12	14 13 16 ⁷⁹	18 58 4 ⁶	106 ⁵⁰	12	16 1 38 ⁵⁵	25 10 29 ⁷	45 ⁷
13	14 15 29 ⁷⁸	19 8 43 ⁶	105 ³⁵	13	16 3 55 ⁹⁸	25 15 2 ⁷	44 ⁷
14	14 17 42 ⁸⁸	19 19 15 ⁷	104 ²²	14	16 6 13 ⁴⁵	25 19 27 ⁶	42 ⁷
15	14 19 56 ¹⁰	19 29 41 ⁰	103 ⁰⁷	15	16 8 30 ⁹⁵	25 23 44 ²	41 ⁷
16	14 22 9 ⁴²	19 39 59 ⁴	101 ⁹²	16	16 10 48 ⁴⁹	25 27 52 ⁶	40 ⁷
17	14 24 22 ⁸⁶	19 50 10 ⁹	100 ⁷⁵	17	16 13 6 ⁰⁵	25 31 52 ⁸	38 ⁶⁵
18	14 26 36 ⁴²	20 0 15 ⁴	99 ⁵⁸	18	16 15 23 ⁶³	25 35 44 ⁷	37 ²²
19	14 28 50 ⁰⁹	20 10 12 ⁹	98 ⁴⁰	19	16 17 41 ²⁴	25 39 28 ⁴	35 ⁹
20	14 31 3 ⁸⁷	20 20 3 ³	97 ²²	20	16 19 58 ⁸⁷	25 43 3 ⁸	34 ⁵³
21	14 33 17 ⁷⁶	20 29 46 ⁶	96 ⁰³	21	16 22 16 ⁵⁰	25 46 31 ⁰	32 ¹⁵
22	14 35 31 ⁷⁷	20 39 22 ⁸	94 ⁸²	22	16 24 34 ¹⁵	25 49 49 ⁹	31 ⁷⁷
23	14 37 45 ⁹⁰	S. 20 48 51 ⁷	93 ⁶³	23	16 26 51 ⁸⁰	S. 25 53 0 ⁵	30 ⁴⁰
<i>WEDNESDAY 2.</i>				<i>FRIDAY 4.</i>			
0	14 40 0 ¹⁴	S. 20 58 13 ⁵	92 ⁴²	0	16 29 9 ⁴⁵	S. 25 56 2 ⁹	29 ⁰²
1	14 42 14 ⁵⁰	21 7 28 ⁰	91 ²⁰	1	16 31 27 ¹⁰	25 58 57 ⁰	27 ⁶⁵
2	14 44 28 ⁹⁶	21 16 35 ²	89 ⁹⁸	2	16 33 44 ⁷⁵	26 1 42 ⁸	26 ²⁷
3	14 46 43 ⁵⁴	21 25 35 ¹	88 ⁷⁵	3	16 36 2 ³⁸	26 4 20 ⁴	24 ³⁷
4	14 48 58 ²³	21 34 27 ⁶	87 ⁵²	4	16 38 20 ⁰⁰	26 6 49 ⁶	23 ⁵⁰
5	14 51 13 ⁰³	21 43 12 ⁷	86 ²⁷	5	16 40 37 ⁶⁰	26 9 10 ⁶	22 ¹²
6	14 53 27 ⁹⁴	21 51 50 ³	85 ⁰³	6	16 42 55 ¹⁸	26 11 23 ³	20 ⁷⁵
7	14 55 42 ⁹⁶	22 0 20 ⁵	83 ⁷⁷	7	16 45 12 ⁷³	26 13 27 ⁸	19 ³⁷
8	14 57 58 ⁰⁹	22 8 43 ¹	82 ⁵²	8	16 47 30 ²⁵	26 15 24 ⁰	17 ⁹⁸
9	15 0 13 ³²	22 16 58 ²	81 ²⁵	9	16 49 47 ⁷⁴	26 17 11 ⁹	16 ⁶⁰
10	15 2 28 ⁶⁶	22 25 5 ⁷	79 ⁹⁸	10	16 52 5 ¹⁹	26 18 51 ⁵	15 ³³
11	15 4 44 ¹¹	22 33 5 ⁶	78 ⁷²	11	16 54 22 ⁵⁹	26 20 22 ⁹	13 ⁸⁵
12	15 6 59 ⁶⁵	22 40 57 ⁹	77 ⁴³	12	16 56 39 ⁹⁵	26 21 46 ⁰	12 ⁴⁸
13	15 9 15 ³⁰	22 48 42 ⁵	76 ¹⁵	13	16 58 57 ²⁶	26 23 0 ⁹	11 ¹⁰
14	15 11 31 ⁰⁴	22 56 19 ⁴	74 ⁸⁵	14	17 1 14 ⁵¹	26 24 7 ⁵	9 ⁷³
15	15 13 46 ⁸⁸	23 3 48 ⁵	73 ⁵⁷	15	17 3 31 ⁷⁰	26 25 5 ⁹	8 ³⁷
16	15 16 2 ⁸²	23 11 9 ⁹	72 ²⁵	16	17 5 48 ⁸²	26 25 56 ¹	7 ⁰⁰
17	15 18 18 ⁸⁶	23 18 23 ⁴	70 ⁹⁷	17	17 8 5 ⁸⁸	26 26 38 ¹	5 ⁶³
18	15 20 34 ⁹⁹	23 25 29 ²	69 ⁶⁵	18	17 10 22 ⁸⁷	26 27 11 ⁹	4 ²⁷
19	15 22 51 ²⁰	23 32 27 ¹	68 ³⁵	19	17 12 39 ⁷⁸	26 27 37 ⁵	2 ⁹²
20	15 25 7 ⁵¹	23 39 17 ²	67 ⁰²	20	17 14 56 ⁶¹	26	1 ⁵
21	15 27 23 ⁹⁰	23 45 59 ³	65 ⁷²	21	17 17 13 ³⁵	26	0 ⁵
22	15 29 40 ³⁸	23 52 33 ⁶	64 ³⁸	22	17 19 30 ⁰¹	26	0 ⁵
	15 31 56 ⁹⁴	23 58 59 ⁹	63 ⁰⁵	23	17 21 4 ⁷		
	15 34 13 ⁵⁸	S. 24 5 18 ²		24	17 24		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

r.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	
<i>SATURDAY 5.</i>					<i>MONDAY 7.</i>			
	h m s	S. ° ' "	"		h m s	S. ° ' "	"	
0	17 24 3 ^o 03	S. 26 27 43 ^o 5	3 ^o 85	0	19 10 6 ^o 74	S. 23 45 41 ^o 2	62 ^o 63	
1	17 26 19 ^o 39	26 27 20 ^o 4	5 ^o 20	1	19 12 14 ^o 22	23 39 25 ^o 4	63 ^o 70	
2	17 28 35 ^o 65	26 26 49 ^o 2	6 ^o 53	2	19 14 21 ^o 46	23 33 3 ^o 2	64 ^o 77	
3	17 30 51 ^o 80	26 26 10 ^o 0	7 ^o 87	3	19 16 28 ^o 45	23 26 34 ^o 6	65 ^o 80	
4	17 33 7 ^o 83	26 25 22 ^o 8	9 ^o 20	4	19 18 35 ^o 20	23 19 59 ^o 8	66 ^o 85	
5	17 35 23 ^o 75	26 24 27 ^o 6	10 ^o 53	5	19 20 41 ^o 70	23 13 18 ^o 7	67 ^o 87	
6	17 37 39 ^o 54	26 23 24 ^o 4	11 ^o 85	6	19 22 47 ^o 95	23 6 31 ^o 5	68 ^o 90	
7	17 39 55 ^o 21	26 22 13 ^o 3	13 ^o 18	7	19 24 53 ^o 96	22 59 38 ^o 1	69 ^o 92	
8	17 42 10 ^o 75	26 20 54 ^o 2	14 ^o 50	8	19 26 59 ^o 71	22 52 38 ^o 6	70 ^o 92	
9	17 44 26 ^o 15	26 19 27 ^o 2	15 ^o 82	9	19 29 5 ^o 22	22 45 38 ^o 1	71 ^o 92	
0	17 46 41 ^o 42	26 17 52 ^o 3	17 ^o 12	10	19 31 10 ^o 48	22 38 21 ^o 6	72 ^o 92	
1	17 48 56 ^o 55	26 16 9 ^o 6	18 ^o 48	11	19 33 15 ^o 48	22 31 4 ^o 1	73 ^o 90	
2	17 51 11 ^o 53	26 14 19 ^o 0	19 ^o 78	12	19 35 20 ^o 23	22 23 40 ^o 7	74 ^o 87	
3	17 53 26 ^o 36	26 12 20 ^o 6	21 ^o 02	13	19 37 24 ^o 73	22 16 11 ^o 5	75 ^o 85	
4	17 55 41 ^o 04	26 10 14 ^o 5	22 ^o 33	14	19 39 28 ^o 98	22 8 36 ^o 4	76 ^o 80	
5	17 57 55 ^o 56	26 8 0 ^o 5	23 ^o 60	15	19 41 32 ^o 97	22 0 55 ^o 6	77 ^o 75	
6	18 0 9 ^o 92	26 5 38 ^o 9	24 ^o 88	16	19 43 36 ^o 72	21 53 9 ^o 1	78 ^o 70	
7	18 2 24 ^o 12	26 3 9 ^o 6	26 ^o 17	17	19 45 40 ^o 21	21 45 16 ^o 9	79 ^o 63	
8	18 4 38 ^o 15	26 0 32 ^o 6	27 ^o 42	18	19 47 43 ^o 45	21 37 19 ^o 1	80 ^o 55	
9	18 6 52 ^o 01	25 57 48 ^o 1	28 ^o 70	19	19 49 46 ^o 44	21 29 15 ^o 8	81 ^o 47	
20	18 9 5 ^o 69	25 54 55 ^o 9	29 ^o 97	20	19 51 49 ^o 17	21 21 7 ^o 0	82 ^o 38	
21	18 11 19 ^o 20	25 51 56 ^o 1	31 ^o 20	21	19 53 51 ^o 65	21 12 52 ^o 7	83 ^o 30	
22	18 13 32 ^o 53	25 48 48 ^o 9	32 ^o 47	22	19 55 53 ^o 88	21 4 32 ^o 9	84 ^o 17	
23	18 15 45 ^o 67	S. 25 45 34 ^o 1	33 ^o 70	23	19 57 55 ^o 86	S. 20 56 7 ^o 9	85 ^o 07	
<i>SUNDAY 6.</i>					<i>TUESDAY 8.</i>			
0	18 17 58 ^o 63	S. 25 42 11 ^o 9	34 ^o 93	0	19 59 57 ^o 59	S. 20 47 37 ^o 5	85 ^o 93	
1	18 20 11 ^o 40	25 38 42 ^o 3	36 ^o 17	1	20 1 59 ^o 07	20 39 1 ^o 9	86 ^o 80	
2	18 22 23 ^o 98	25 35 5 ^o 3	37 ^o 40	2	20 4 0 ^o 30	20 30 21 ^o 1	87 ^o 67	
3	18 24 36 ^o 36	25 31 20 ^o 9	38 ^o 60	3	20 6 1 ^o 27	20 21 35 ^o 1	88 ^o 52	
4	18 26 48 ^o 54	25 27 29 ^o 3	39 ^o 82	4	20 8 2 ^o 00	20 12 44 ^o 0	89 ^o 37	
5	18 29 0 ^o 52	25 23 30 ^o 4	41 ^o 03	5	20 10 2 ^o 49	20 3 47 ^o 8	90 ^o 18	
6	18 31 12 ^o 30	25 19 24 ^o 2	42 ^o 23	6	20 12 2 ^o 72	19 54 46 ^o 7	91 ^o 02	
7	18 33 23 ^o 87	25 15 10 ^o 8	43 ^o 42	7	20 14 2 ^o 71	19 45 40 ^o 6	91 ^o 83	
8	18 35 35 ^o 23	25 10 50 ^o 3	44 ^o 62	8	20 16 2 ^o 45	19 36 29 ^o 6	92 ^o 63	
9	18 37 46 ^o 38	25 6 22 ^o 6	45 ^o 78	9	20 18 1 ^o 94	19 27 13 ^o 8	93 ^o 45	
10	18 39 57 ^o 32	25 1 47 ^o 9	46 ^o 97	10	20 20 1 ^o 20	19 17 53 ^o 1	94 ^o 23	
11	18 42 8 ^o 04	24 57 6 ^o 1	48 ^o 18	11	20 22 0 ^o 21	19 8 27 ^o 7	95 ^o 02	
12	18 44 18 ^o 54	24 52 17 ^o 3	49 ^o 30	12	20 23 58 ^o 98	18 58 57 ^o 6	95 ^o 80	
13	18 46 28 ^o 82	24 47 21 ^o 5	50 ^o 45	13	20 25 57 ^o 51	18 49 22 ^o 8	96 ^o 55	
14	18 48 38 ^o 88	24 42 18 ^o 8	51 ^o 58	14	20 27 55 ^o 80	18 39 43 ^o 5	97 ^o 32	
15	18 50 48 ^o 71	24 37 9 ^o 3	52 ^o 78	15	20 29 53 ^o 85	18 29 59 ^o 6	98 ^o 07	
16	18 52 58 ^o 31	24 31 52 ^o 9	53 ^o 87	16	20 31 51 ^o 67	18 20 11 ^o 2	98 ^o 80	
17	18 55 7 ^o 69	24 26 29 ^o 7	54 ^o 98	17	20 33 49 ^o 25	18 10 18 ^o 4	99 ^o 55	
18	18 57 16 ^o 83	24 20 59 ^o 8	56 ^o 10	18	20 35 46 ^o 60	18 0 21 ^o 1	100 ^o 27	
19	18 59 25 ^o 74	24 15 23 ^o 2	57 ^o 22	19	20 37 43 ^o 71	17 50 19 ^o 5	100 ^o 97	
20	19 1 34 ^o 42	24 9 39 ^o 9	58 ^o 32	20	20 39 40 ^o 60	17 40 13 ^o 7	101 ^o 68	
21	3 42 ^o 86	24 3 50 ^o 0	59 ^o 40	21	20 41 37 ^o 26	17 30 3 ^o 6	102 ^o 38	
22	5 51 ^o 06	23 57 53 ^o 6	60 ^o 50	22	20 43 33 ^o 69	17 19 49 ^o 3	103 ^o 08	
23	8 9 ^o 08	23 51 50 ^o 6	61 ^o 57	23	20 45 29 ^o 89	17 9 30 ^o 8	103 ^o 75	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{ns} .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{ns} .
<i>WEDNESDAY 9.</i>				<i>FRIDAY 11.</i>			
0	^h 20 ^m 47 ^s 25·87	S. 16° 59' 8" 3	104·43	0	^h 22 ^m 16 ^s 35·08	S. 7° 36' 55" 8	122·
1	20 49 21·63	16 48 41·7	105·08	1	22 18 23·09	7 24 12·2	122·
2	20 51 17·17	16 38 11·2	105·75	2	22 20 11·00	7 11 26·8	122·
3	20 53 12·50	16 27 36·7	106·40	3	22 21 58·83	6 58 39·8	122·
4	20 55 7·60	16 16 58·3	107·03	4	22 23 46·58	6 45 51·2	122·
5	20 57 2·50	16 6 16·1	107·67	5	22 25 34·25	6 33 0·9	122·
6	20 58 57·18	15 55 30·1	108·28	6	22 27 21·85	6 20 9·2	122·
7	21 0 51·65	15 44 40·4	108·90	7	22 29 9·37	6 7 15·9	122·
8	21 2 45·91	15 33 47·0	109·52	8	22 30 56·82	5 54 21·2	122·
9	21 4 39·97	15 22 49·9	110·12	9	22 32 44·20	5 41 25·2	122·
10	21 6 33·82	15 11 49·2	110·70	10	22 34 31·52	5 28 27·7	122·
11	21 8 27·48	15 0 45·0	111·28	11	22 36 18·79	5 15 28·9	122·
12	21 10 20·93	14 49 37·3	111·87	12	22 38 5·99	5 2 28·9	122·
13	21 12 14·19	14 38 26·1	112·42	13	22 39 53·14	4 49 27·6	122·
14	21 14 7·25	14 27 11·6	112·98	14	22 41 40·25	4 36 25·2	122·
15	21 16 0·12	14 15 53·7	113·53	15	22 43 27·31	4 23 21·6	122·
16	21 17 52·81	14 4 32·5	114·08	16	22 45 14·33	4 10 17·0	122·
17	21 19 45·30	13 53 8·0	114·60	17	22 47 1·31	3 57 11·2	122·
18	21 21 37·62	13 41 40·4	115·15	18	22 48 48·26	3 44 4·5	122·
19	21 23 29·75	13 30 9·5	115·65	19	22 50 35·17	3 30 56·8	122·
20	21 25 21·70	13 18 35·6	116·17	20	22 52 22·06	3 17 48·2	122·
21	21 27 13·48	13 6 58·6	116·67	21	22 54 8·93	3 4 38·7	122·
22	21 29 5·08	12 55 18·6	117·15	22	22 55 55·77	2 51 28·4	122·
23	21 30 56·51	S. 12° 43' 35" 7	117·65	23	22 57 42·60	S. 2° 38' 17" 3	122·
<i>THURSDAY 10.</i>				<i>SATURDAY 12.</i>			
0	21 32 47·77	S. 12° 31' 49" 8	118·12	0	22 59 29·41	S. 2° 25' 5" 5	122·
1	21 34 38·87	12 20 1·1	118·60	1	23 1 16·21	2 11 53·0	122·
2	21 36 29·80	12 8 9·5	119·05	2	23 3 3·01	1 58 39·8	122·
3	21 38 20·58	11 56 15·2	119·52	3	23 4 49·81	1 45 26·0	122·
4	21 40 11·20	11 44 18·1	119·95	4	23 6 36·61	1 32 11·6	122·
5	21 42 1·66	11 32 18·4	120·40	5	23 8 23·42	1 18 56·7	122·
6	21 43 51·97	11 20 16·0	120·82	6	23 10 10·23	1 5 41·3	122·
7	21 45 42·14	11 8 11·1	121·25	7	23 11 57·06	0 52 25·5	122·
8	21 47 32·16	10 56 8·6	121·67	8	23 13 43·90	0 39 9·3	122·
9	21 49 22·03	10 43 53·6	122·08	9	23 15 30·76	0 25 52·7	122·
10	21 51 11·77	10 31 41·1	122·47	10	23 17 17·65	S. 0° 12' 35" 8	122·
11	21 53 1·37	10 19 26·3	122·87	11	23 19 4·56	N. 0° 0' 41" 3	122·
12	21 54 50·83	10 7 9·1	123·25	12	23 20 51·51	0 13 58·7	122·
13	21 56 40·16	9 54 49·6	123·63	13	23 22 38·49	0 27 16·3	122·
14	21 58 29·37	9 42 27·8	124·00	14	23 24 25·51	0 40 34·0	122·
15	22 0 18·45	9 30 8·8	124·35	15	23 26 12·58	0 53 51·8	122·
16	22 2 7·41	9 17 37·7	124·72	16	23 27 59·69	1 7 9·6	122·
17	22 3 56·25	9 5 9·4	125·07	17	23 29 46·85	1 20 27·4	122·
18	22 5 44·97	8 52 39·0	125·42	18	23 31 34·07	1 33 45·2	122·
19	22 7 33·58	8 40 6·7	125·73	19	23 33 21·34	1 47 2·9	122·
20	22 9 22·09	8 27 32·3	126·05	20	23 35 8·67	2 0 20·5	122·
21	22 11 10·49	8 14 56·0	126·38	21	23 36 56		122·
22	22 12 58·78	8 2 17·7	126·67	22	23 38 47		122·
23	22 14 46·98	7 49 37·7	126·98	23	23 40 38		122·
	22 16 35·08	S. 7° 36' 55" 8		24	23 42 30		122·

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Right Ascension.			Declination.			Diff. Dec. for 10 ^m .	Hour.	Right Ascension.			Declination.			Diff. Dec. for 10 ^m .						
SUNDAY 13.						TUESDAY 15.														
^h	^m	^s	^o	ⁱ	["]	^N		^h	^m	^s	^N	^o	ⁱ	["]	^N					
23	42	18	71	N.	2	53	28	5	13	13	08	N.	13	9	16	3	120	70		
23	44	6	41		3	6	44	7	13	9	35		13	21	18	9	132	63		
23	45	54	20		3	20	0	5	15	5	69		13	33	18	6	132	65		
23	47	42	08		3	33	15	8	17	2	71		13	45	15	5	132	48		
23	49	30	05		3	46	30	7	18	59	81		13	57	9	4	132	38		
23	51	18	12		3	59	45	0	18	20	57	20	14	9	0	4	132	28		
23	53	6	29		4	12	58	7	1	22	54	88	14	20	48	3	132	18		
23	54	54	56		4	26	11	8	1	24	52	86	14	32	33	0	132	07		
23	56	42	94		4	39	24	2	1	26	51	13	14	44	14	6	131	95		
23	58	31	44		4	52	35	9	1	28	49	71	14	55	52	9	131	82		
0	0	20	05		5	5	46	8	1	30	48	59	15	7	28	0	131	68		
0	2	8	78		5	18	56	9	1	32	47	78	15	18	59	7	131	55		
0	3	57	63		5	32	6	2	1	34	47	29	15	30	27	9	131	42		
0	5	46	62		5	45	14	6	1	36	47	11	15	41	52	6	131	23		
0	7	35	73		5	58	22	0	1	38	47	25	15	53	13	8	131	07		
0	9	24	98		6	11	28	4	1	40	47	72	16	4	31	4	130	90		
0	11	14	38		6	24	33	8	1	42	48	51	16	15	45	3	130	72		
0	13	3	91		6	37	38	1	1	44	49	63	16	26	55	5	130	53		
0	14	53	60		6	50	41	3	1	46	51	08	16	38	1	8	130	33		
0	16	43	44		7	3	48	3	1	48	52	87	16	49	4	3	130	12		
0	18	33	43		7	16	44	0	1	50	55	00	17	0	2	9	129	90		
0	20	23	58		7	29	43	4	1	52	57	47	17	10	57	4	129	68		
0	22	13	90		7	42	41	5	1	55	0	29	17	21	47	8	129	45		
0	24	4	39	N.	7	55	38	2	1	57	3	46	N.	17	32	34	2	129	22	
MONDAY 14.						WEDNESDAY 16.														
^h	^m	^s	^o	ⁱ	["]	^N		^h	^m	^s	^N	^o	ⁱ	["]	^N					
0	0	25	55	05	N.	8	8	33	5	1	59	6	98	N.	17	43	16	3	128	97
1	0	27	45	89		8	21	27	3	1	2	10	85		17	53	54	2	128	70
2	0	29	36	91		8	34	19	5	2	3	15	08		18	4	27	7	128	45
3	0	31	28	11		8	47	10	2	2	5	19	68		18	14	56	8	128	17
4	0	33	19	50		8	59	59	2	2	7	24	63		18	25	21	4	127	88
5	0	35	11	08		9	12	46	5	2	9	29	96		18	35	41	5	127	60
6	0	37	2	86		9	25	32	1	2	11	35	65		18	45	57	0	127	30
7	0	38	54	84		9	38	15	9	2	13	41	72		18	56	7	7	127	00
8	0	40	47	03		9	50	57	9	2	15	48	16		19	6	13	7	126	67
9	0	42	39	42		10	3	37	9	2	17	54	98		19	16	14	9	126	37
10	0	44	32	03		10	16	16	1	2	20	2	17		19	26	11	1	126	02
11	0	46	24	86		10	28	52	2	2	22	9	75		19	36	2	4	125	68
12	0	48	17	90		10	41	26	3	2	24	17	72		19	45	48	6	125	33
13	0	50	11	17		10	53	58	3	2	26	26	08		19	55	29	7	124	97
14	0	52	4	67		11	6	28	1	2	28	34	82		20	5	5	5	124	62
15	0	53	58	40		11	18	55	8	2	30	43	96		20	14	36	1	124	23
16	0	55	52	37		11	31	21	2	2	32	53	49		20	24	1	4	123	83
17	0	57	46	57		11	43	44	2	2	35	3	42		20	33	21	2	123	45
18	0	59	41	03		11	56	4	9	2	37	13	74		20	42	35	4	123	05
19	1	1	35	73		12	8	23	2	2	39	24	46		20	51	44	2	122	63
20	1	3	30	68		12	20	39	0	2	41	35	58		21	0	47	2	122	22
21	1	5	25	89		12	32	52	3	2	43	47	10		21	9	44	5	121	77
22	1	7	21	35		12	45	8	9	2	45	59	03		21	18	36	0	121	35
23	1	9	17	08		12	57	11	0	2	48	11	36		21	27	21	7	120	88

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
THURSDAY 17.				SATURDAY 19.			
	<i>h m s</i>	<i>° ' "</i>	<i>"</i>		<i>h m s</i>	<i>° ' "</i>	<i>"</i>
0	2 50 24.09	N.21 36 1.3	85.60	0	4 44 25.04	N.26 8 57.2	21.5
1	2 52 37.23	21 44 34.9	84.58	1	4 46 56.45	26 11 8.4	20.2
2	2 54 50.78	21 53 2.4	83.55	2	4 49 28.15	26 13 9.8	18.9
3	2 57 4.73	22 1 23.7	82.50	3	4 52 0.14	26 15 1.4	16.5
4	2 59 19.10	22 9 38.7	81.45	4	4 54 32.41	26 16 43.2	15.2
5	3 1 33.87	22 17 47.4	80.37	5	4 57 4.95	26 18 15.1	13.8
6	3 3 49.06	22 25 49.6	79.27	6	4 59 37.75	26 19 36.9	11.7
7	3 6 4.66	22 33 45.2	78.18	7	5 2 10.82	26 20 48.8	10.1
8	3 8 20.67	22 41 34.3	77.07	8	5 4 44.13	26 21 50.5	8.4
9	3 10 37.09	22 49 16.7	75.95	9	5 7 17.70	26 22 42.1	6.9
10	3 12 53.92	22 56 52.4	74.80	10	5 9 51.50	26 23 23.5	5.4
11	3 15 11.16	23 4 21.2	73.65	11	5 12 25.54	26 23 54.7	3.9
12	3 17 28.81	23 11 43.1	72.48	12	5 14 59.80	26 24 15.6	2.4
13	3 19 46.88	23 18 58.0	71.30	13	5 17 34.29	26 24 26.2	0.7
14	3 22 5.36	23 26 5.8	70.12	14	5 20 8.99	26 24 26.4	1.5
15	3 24 24.24	23 33 6.5	68.90	15	5 22 43.89	26 24 16.1	3.4
16	3 26 43.54	23 39 59.9	67.68	16	5 25 18.99	26 23 55.5	5.4
17	3 29 3.25	23 46 46.0	66.45	17	5 27 54.28	26 23 24.3	6.9
18	3 31 23.36	23 53 24.7	65.20	18	5 30 29.75	26 22 42.6	8.7
19	3 33 43.88	23 59 55.9	63.93	19	5 33 5.39	26 21 50.3	10.6
20	3 36 4.81	24 6 19.5	62.68	20	5 35 41.20	26 20 47.5	12.4
21	3 38 26.14	24 12 35.6	61.38	21	5 38 17.16	26 19 34.0	14.2
22	3 40 47.87	24 18 43.9	60.08	22	5 40 53.28	26 18 9.9	15.9
23	3 43 10.00	N.24 24 44.4	58.77	23	5 43 29.53	N.26 16 35.0	17.4
FRIDAY 18.				SUNDAY 20.			
	<i>h m s</i>	<i>° ' "</i>	<i>"</i>		<i>h m s</i>	<i>° ' "</i>	<i>"</i>
0	3 45 32.53	N.24 30 37.0	57.45	0	5 46 5.92	N.26 14 49.5	19.3
1	3 47 55.46	24 36 21.7	56.10	1	5 48 42.44	26 12 53.2	21.7
2	3 50 18.78	24 41 58.3	54.77	2	5 51 19.07	26 10 46.2	22.5
3	3 52 42.50	24 47 26.9	53.38	3	5 53 55.81	26 8 28.4	24.7
4	3 55 6.60	24 52 47.2	52.02	4	5 56 32.65	26 5 59.8	26.5
5	3 57 31.09	24 57 59.3	50.62	5	5 59 9.58	26 3 20.3	28.3
6	3 59 55.97	25 3 3.0	49.22	6	6 1 46.60	26 0 30.1	30.7
7	4 2 21.22	25 7 58.3	47.80	7	6 4 23.69	25 57 29.1	31.9
8	4 4 46.85	25 12 45.1	46.37	8	6 7 0.85	25 54 17.2	33.7
9	4 7 12.85	25 17 23.3	44.92	9	6 9 38.07	25 50 54.5	35.4
10	4 9 39.23	25 21 52.8	43.48	10	6 12 15.34	25 47 20.9	37.0
11	4 12 5.97	25 26 13.7	42.00	11	6 14 52.65	25 43 36.5	39.2
12	4 14 33.07	25 30 25.7	40.52	12	6 17 29.99	25 39 41.2	41.9
13	4 17 0.53	25 34 28.8	39.02	13	6 20 7.36	25 35 35.1	42.3
14	4 19 28.36	25 38 23.0	37.53	14	6 22 44.74	25 31 18.1	44.6
15	4 21 56.53	25 42 8.2	36.02	15	6 25 22.14	25 26 50.3	46.4
16	4 24 25.04	25 45 44.3	34.48	16	6 27 59.53	25 22 11.7	48.2
17	4 26 53.90	25 49 11.2	32.93	17	6 30 36.92	25 17 22.3	50.0
18	4 29 23.10	25 52 28.8	31.40	18	6 33 14.29	25 12 22.1	51.8
19	4 31 52.62	25 55 37.2	29.83	19	6 35 51.64	25 7 11.1	53.6
20	4 34 22.47	25 58 36.2	28.2			25 1 49.4	55.4
21	4 36 52.65	26 1 25.7	26.5			56 16.9	57.2
22	4 39 23.14	26 4 5.8	25.0			0 33.7	58.9
23	4 41 53.94	26 6 36.3	23.5			39.8	60.7
24	4 44 25.04	N.26 8 57.2					

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10".	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10".
MONDAY 21.				WEDNESDAY 23.			
0	6 48 57.77	N.24 38 35.2	62.83	0	8 51 30.84	N.16 35 30.1	135.25
1	6 51 34.82	24 32 20.0	64.30	1	8 53 58.45	16 21 58.6	136.89
2	6 54 11.80	24 25 54.2	66.07	2	8 56 25.79	16 8 20.3	137.80
3	6 56 48.69	24 19 17.8	67.82	3	8 58 52.88	15 54 35.3	138.60
4	6 59 25.50	24 12 30.9	69.57	4	9 1 19.71	15 40 43.7	139.68
5	7 2 2.20	24 5 33.5	71.30	5	9 3 46.27	15 26 45.6	140.75
6	7 4 38.80	23 58 25.7	73.05	6	9 6 12.57	15 12 41.1	141.80
7	7 7 15.29	23 51 7.4	74.77	7	9 8 38.62	14 58 30.3	142.82
8	7 9 51.67	23 43 38.8	76.50	8	9 11 4.41	14 44 13.4	143.83
9	7 12 27.92	23 35 59.8	78.20	9	9 13 29.93	14 29 50.4	144.82
10	7 15 4.04	23 28 10.6	79.92	10	9 15 55.80	14 15 21.5	145.77
11	7 17 40.02	23 20 11.1	81.60	11	9 18 20.21	14 0 46.9	146.73
12	7 20 15.85	23 12 1.5	83.30	12	9 20 44.97	13 46 6.5	147.65
13	7 22 51.54	23 3 41.7	84.97	13	9 23 9.47	13 31 20.6	148.57
14	7 25 27.07	22 55 11.9	86.63	14	9 25 33.72	13 16 29.2	149.48
15	7 28 2.44	22 46 32.1	88.28	15	9 27 57.71	13 1 32.6	150.32
16	7 30 37.64	22 37 42.4	89.93	16	9 30 21.45	12 46 30.7	151.15
17	7 33 12.67	22 28 42.8	91.57	17	9 32 44.95	12 31 23.8	151.98
18	7 35 47.52	22 19 33.4	93.20	18	9 35 8.20	12 16 11.9	152.77
19	7 38 22.19	22 10 14.2	94.80	19	9 37 31.21	12 0 55.3	153.57
20	7 40 56.67	22 0 45.4	96.40	20	9 39 53.97	11 45 33.9	154.32
21	7 43 30.97	21 51 7.0	97.98	21	9 42 16.50	11 30 7.9	155.07
22	7 46 5.06	21 41 19.1	99.57	22	9 44 38.78	11 14 37.5	155.80
23	7 48 38.95	N.21 31 21.7	101.12	23	9 47 0.83	N.10 59 2.7	156.48
TUESDAY 22.				THURSDAY 24.			
0	7 51 12.63	N.21 21 15.0	102.67	0	9 49 22.65	N.10 43 23.8	157.17
1	7 53 46.11	21 10 59.0	104.20	1	9 51 44.84	10 27 40.8	157.83
2	7 56 19.37	21 0 33.8	105.72	2	9 54 5.60	10 11 53.8	158.47
3	7 58 52.41	20 49 59.5	107.23	3	9 56 26.74	9 56 3.0	159.08
4	8 1 25.24	20 39 16.1	108.72	4	9 58 47.65	9 40 8.5	159.68
5	8 3 57.83	20 28 23.8	110.20	5	10 1 8.34	9 24 10.4	160.25
6	8 6 30.20	20 17 22.6	111.67	6	10 3 28.82	9 8 8.9	160.80
7	8 9 2.34	20 6 12.6	113.12	7	10 5 49.08	8 52 4.1	161.35
8	8 11 34.24	19 54.53.9	114.55	8	10 8 9.12	8 35 56.0	161.85
9	8 14 5.90	19 43 26.6	115.97	9	10 10 28.96	8 19 44.9	162.33
10	8 16 37.32	19 31 50.8	117.37	10	10 12 48.59	8 3 30.9	162.82
11	8 19 8.50	19 20 6.6	118.77	11	10 15 8.02	7 47 14.0	163.27
12	8 21 39.43	19 8 14.0	120.13	12	10 17 27.25	7 30 54.4	163.68
13	8 24 10.11	18 56 13.2	121.50	13	10 19 46.28	7 14 32.3	164.10
14	8 26 40.55	18 44 4.2	122.83	14	10 22 5.12	6 58 7.7	164.48
15	8 29 10.73	18 31 47.2	124.15	15	10 24 23.77	6 41 40.8	164.85
16	8 31 40.66	18 19 22.3	125.47	16	10 26 42.24	6 25 11.7	165.20
17	8 34 10.33	18 6 49.5	126.75	17	10 29 0.52	6 8 40.5	165.52
18	8 36 39.75	17 54 9.0	128.00	18	10 31 18.62	5 52 7.4	165.82
19	8 39 8.91	17 41 21.0	129.27	19	10 33 36.55	5 35 32.5	166.10
20	8 41 37.81	17 28 25.4	130.50	20	10 35 54.31	5 18 55.9	166.37
21	8 44 6.46	17 15 22.4	131.72	21	10 38 11.90	5 2 17.7	166.62
22	8 46 34.85	17 2 12.1	132.92	22	10 40 29.33	4 45 38.0	166.82
23	8 49 2.97	16 48 54.6	134.08	23	10 42 46.60	4 28 57.1	167.03

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>FRIDAY 25.</i>				<i>SUNDAY 27.</i>			
0	10 45 3 ^h 71 ^m	N. 4 12 14 ^o 9 ⁿ	167 ^u 20	0	12 32 58 ^h 23 ^m	S. 8 54 54 ^o 9 ⁿ	152 ^u 7
1	10 47 20 ^h 67 ^m	3 55 81 ^o 7 ⁿ	167 ^u 37	1	12 35 12 ^h 45 ^m	9 10 16 ^o 2 ⁿ	152 ^u 1
2	10 49 37 ^h 49 ^m	3 38 47 ^o 5 ⁿ	167 ^u 52	2	12 37 26 ^h 70 ^m	9 25 33 ^o 3 ⁿ	152 ^u 1
3	10 51 54 ^h 16 ^m	3 22 2 ^o 4 ⁿ	167 ^u 62	3	12 39 40 ^h 98 ^m	9 40 46 ^o 1 ⁿ	151 ^u 4
4	10 54 10 ^h 69 ^m	3 5 16 ^o 7 ⁿ	167 ^u 72	4	12 41 55 ^h 30 ^m	9 55 54 ^o 5 ⁿ	150 ^u 4
5	10 56 27 ^h 08 ^m	2 48 30 ^o 4 ⁿ	167 ^u 80	5	12 44 9 ^h 66 ^m	10 10 58 ^o 4 ⁿ	149 ^u 3
6	10 58 43 ^h 33 ^m	2 31 43 ^o 6 ⁿ	167 ^u 87	6	12 46 24 ^h 07 ^m	10 25 57 ^o 8 ⁿ	149 ^u 3
7	11 0 59 ^h 47 ^m	2 14 56 ^o 4 ⁿ	167 ^u 90	7	12 48 38 ^h 52 ^m	10 40 52 ^o 4 ⁿ	148 ^u 3
8	11 3 15 ^h 47 ^m	1 58 9 ^o 0 ⁿ	167 ^u 92	8	12 50 53 ^h 02 ^m	10 55 42 ^o 4 ⁿ	147 ^u 3
9	11 5 31 ^h 35 ^m	1 41 21 ^o 5 ⁿ	167 ^u 92	9	12 53 7 ^h 57 ^m	11 10 27 ^o 5 ⁿ	146 ^u 7
10	11 7 47 ^h 12 ^m	1 24 34 ^o 0 ⁿ	167 ^u 90	10	12 55 22 ^h 17 ^m	11 25 7 ^o 7 ⁿ	145 ^u 7
11	11 10 3 ^h 77 ^m	1 7 46 ^o 6 ⁿ	167 ^u 85	11	12 57 36 ^h 33 ^m	11 39 42 ^o 9 ⁿ	145 ^u 5
12	11 12 18 ^h 32 ^m	0 50 59 ^o 5 ⁿ	167 ^u 80	12	12 59 51 ^h 55 ^m	11 54 13 ^o 0 ⁿ	144 ^u 1
13	11 14 33 ^h 76 ^m	0 34 12 ^o 7 ⁿ	167 ^u 72	13	13 2 6 ^h 33 ^m	12 8 38 ^o 0 ⁿ	143 ^u 3
14	11 16 49 ^h 09 ^m	0 17 26 ^o 4 ⁿ	167 ^u 62	14	13 4 21 ^h 17 ^m	12 22 57 ^o 7 ⁿ	142 ^u 4
15	11 19 4 ^h 33 ^m	N. 0 0 40 ^o 7 ⁿ	167 ^u 52	15	13 6 36 ^h 08 ^m	12 37 12 ^o 1 ⁿ	141 ^u 5
16	11 21 19 ^h 48 ^m	S. 0 16 4 ^o 4 ⁿ	167 ^u 37	16	13 8 51 ^h 06 ^m	12 51 21 ^o 1 ⁿ	140 ^u 4
17	11 23 34 ^h 53 ^m	0 32 48 ^o 6 ⁿ	167 ^u 20	17	13 11 6 ^h 12 ^m	13 5 24 ^o 6 ⁿ	139 ^u 6
18	11 25 49 ^h 50 ^m	0 49 31 ^o 8 ⁿ	167 ^u 08	18	13 13 21 ^h 24 ^m	13 19 22 ^o 6 ⁿ	138 ^u 7
19	11 28 4 ^h 39 ^m	1 6 14 ^o 0 ⁿ	166 ^u 85	19	13 15 36 ^h 44 ^m	13 33 15 ^o 0 ⁿ	137 ^u 7
20	11 30 19 ^h 20 ^m	1 22 55 ^o 1 ⁿ	166 ^u 62	20	13 17 51 ^h 71 ^m	13 47 1 ^o 7 ⁿ	136 ^u 11
21	11 32 33 ^h 94 ^m	1 39 34 ^o 8 ⁿ	166 ^u 40	21	13 20 7 ^h 07 ^m	14 0 42 ^o 6 ⁿ	135 ^u 11
22	11 34 48 ^h 61 ^m	1 56 13 ^o 2 ⁿ	166 ^u 18	22	13 22 22 ^h 50 ^m	14 14 17 ^o 6 ⁿ	134 ^u 7
23	11 37 3 ^h 21 ^m	S. 2 12 50 ^o 1 ⁿ	165 ^u 88	23	13 24 38 ^h 02 ^m	S. 14 27 46 ^o 8 ⁿ	133 ^u 15
<i>SATURDAY 26.</i>				<i>MONDAY 28.</i>			
0	11 39 17 ^h 75 ^m	S. 2 29 25 ^o 4 ⁿ	165 ^u 60	0	13 26 53 ^h 63 ^m	S. 14 41 9 ^o 9 ⁿ	132 ^u 15
1	11 41 32 ^h 24 ^m	2 45 59 ^o 0 ⁿ	165 ^u 28	1	13 29 9 ^h 32 ^m	14 54 27 ^o 0 ⁿ	131 ^u 13
2	11 43 46 ^h 67 ^m	3 2 30 ^o 7 ⁿ	164 ^u 97	2	13 31 25 ^h 09 ^m	15 7 38 ^o 0 ⁿ	130 ^u 11
3	11 46 1 ^h 05 ^m	3 19 0 ^o 5 ⁿ	164 ^u 63	3	13 33 40 ^h 96 ^m	15 20 42 ^o 8 ⁿ	129 ^u 7
4	11 48 15 ^h 39 ^m	3 35 28 ^o 3 ⁿ	164 ^u 27	4	13 35 56 ^h 91 ^m	15 33 41 ^o 3 ⁿ	128 ^u 7
5	11 50 29 ^h 69 ^m	3 51 53 ^o 9 ⁿ	163 ^u 90	5	13 38 12 ^h 96 ^m	15 46 35 ^o 5 ⁿ	127 ^u 6
6	11 52 43 ^h 94 ^m	4 8 17 ^o 3 ⁿ	163 ^u 48	6	13 40 29 ^h 10 ^m	15 59 19 ^o 2 ⁿ	126 ^u 5
7	11 54 58 ^h 17 ^m	4 24 38 ^o 2 ⁿ	163 ^u 08	7	13 42 45 ^h 33 ^m	16 11 58 ^o 6 ⁿ	125 ^u 4
8	11 57 12 ^h 36 ^m	4 40 56 ^o 7 ⁿ	162 ^u 65	8	13 45 1 ^h 66 ^m	16 24 31 ^o 4 ⁿ	124 ^u 3
9	11 59 26 ^h 53 ^m	4 57 12 ^o 6 ⁿ	162 ^u 20	9	13 47 18 ^h 08 ^m	16 36 57 ^o 6 ⁿ	123 ^u 3
10	12 1 40 ^h 67 ^m	5 13 25 ^o 8 ⁿ	161 ^u 75	10	13 49 34 ^h 60 ^m	16 49 17 ^o 2 ⁿ	122 ^u 1
11	12 3 54 ^h 79 ^m	5 29 36 ^o 3 ⁿ	161 ^u 25	11	13 51 51 ^h 22 ^m	17 1 30 ^o 0 ⁿ	121 ^u 1
12	12 6 8 ^h 90 ^m	5 45 43 ^o 8 ⁿ	160 ^u 77	12	13 54 7 ^h 93 ^m	17 13 36 ^o 1 ⁿ	119 ^u 1
13	12 8 22 ^h 99 ^m	6 1 48 ^o 4 ⁿ	160 ^u 27	13	13 56 24 ^h 74 ^m	17 25 35 ^o 4 ⁿ	118 ^u 7
14	12 10 37 ^h 08 ^m	6 17 50 ^o 9 ⁿ	159 ^u 73	14	13 58 41 ^h 65 ^m	17 37 27 ^o 7 ⁿ	117 ^u 5
15	12 12 51 ^h 16 ^m	6 33 48 ^o 4 ⁿ	159 ^u 18	15	14 0 58 ^h 66 ^m	17 49 13 ^o 1 ⁿ	116 ^u 4
16	12 15 5 ^h 24 ^m	6 49 43 ^o 5 ⁿ	158 ^u 62	16	14 3 15 ^h 76 ^m	18 0 51 ^o 5 ⁿ	115 ^u 2
17	12 17 19 ^h 32 ^m	7 5 35 ^o 2 ⁿ	158 ^u 05	17	14 5 32 ^h 97 ^m	18 12 22 ^o 9 ⁿ	114 ^u 1
18	12 19 33 ^h 41 ^m	7 21 23 ^o 5 ⁿ	157 ^u 48	18	14 7 50 ^h 28 ^m	18 23 47 ^o 1 ⁿ	112 ^u 1
19	12 21 47 ^h 51 ^m	7 37 8 ^o 2 ⁿ	156 ^u 83	19	14 10 7 ^h 69 ^m		111 ^u 1
20	12 24 1 ^h 62 ^m	7 52 49 ^o 9 ⁿ	156 ^u 28	20	14 12 25 ^h		110 ^u 1
21	12 26 15 ^h 74 ^m	8 8 26 ^o 5 ⁿ	155 ^u 88	21	14 14 42 ^h		109 ^u 1
22	12 28 29 ^h 88 ^m	8 24 0 ^o 0 ⁿ	154 ^u 90	22	14 17		
23	12 30 44 ^h 04 ^m	8 39 29 ^o 4 ⁿ	154 ^u 35	23	14 19 1		
24	12 32 58 ^h 23 ^m	S. 8 54 54 ^o 9 ⁿ		24	14 21 1		

MEAN TIME.

PHASES OF THE MOON.

	d	h	m
☾ <i>Last Quarter</i> - - - - -	1	22	26.4
● <i>New Moon</i> - - - - -	9	23	54.4
☽ <i>First Quarter</i> - - - - -	17	23	40.9
○ <i>Full Moon</i> - - - - -	24	16	15.1

	d	h
☾ <i>Apogee</i> - - - - -	9	18
☾ <i>Perigee</i> - - - - -	24	2

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.			P.L. of diff.			III ^b .			P.L. of diff.			VI ^b .			P.L. of diff.			IX ^b .						
		°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"				
1	Pollux W.	100	13	42	2533	101	54	9	2551	103	34	12	2569	105	13	50	2587	106	42	57	2605	108	13	50	2623	
	Regulus W.	63	17	12	2516	64	58	3	2534	66	38	29	2551	68	18	32	2568	70	18	32	2585	72	18	32	2602	
	Spica η W.	9	39	27	2729	11	15	29	2688	12	52	25	2669	14	29	47	2650	16	29	47	2631	18	29	47	2612	
	Antares E.	36	40	3	2510	34	59	4	2527	33	18	28	2545	31	38	17	2526	29	38	17	2507	27	38	17	2488	
	Saturn E.	68	58	23	2648	67	18	17	2566	65	38	35	2583	63	59	17	2564	61	59	17	2545	59	59	17	2526	
	Jupiter E.	69	35	31	2580	67	56	9	2599	66	17	12	2616	64	38	39	2635	62	38	39	2654	60	38	39	2673	
	α Aquilæ E.	91	31	50	3100	90	3	40	3118	88	35	52	3135	87	8	25	3152	85	8	25	3169	83	8	25	3186	
Sun E.	101	29	5	2849	99	55	41	2868	98	22	41	2887	96	50	5	2906	94	50	5	2925	92	50	5	2944		
2	Pollux W.	113	26	8	2672	115	3	26	2687	116	40	23	2704	118	16	58	2721	120	16	58	2738	122	16	58	2755	
	Regulus W.	76	33	0	2650	78	10	47	2665	79	48	14	2681	81	25	19	2697	83	25	19	2713	85	25	19	2729	
	Spica η W.	22	36	56	2687	24	13	54	2698	25	50	37	2709	27	27	5	2720	29	27	5	2731	31	27	5	2742	
	Antares E.	23	23	9	2644	21	45	14	2661	20	7	41	2676	18	30	29	2691	16	30	29	2706	14	30	29	2721	
	Saturn E.	55	48	36	2684	54	11	35	2701	52	34	56	2717	50	58	38	2733	48	58	38	2749	46	58	38	2765	
	Jupiter E.	56	31	43	2717	54	55	26	2724	53	19	31	2750	51	43	57	2766	49	43	57	2782	47	43	57	2798	
	α Aquilæ E.	79	57	5	3259	78	32	5	3282	77	7	32	3306	75	43	27	3329	73	43	27	3352	71	43	27	3375	
Sun E.	89	12	52	2995	87	42	33	3011	86	12	34	3029	84	42	57	3047	82	42	57	3065	80	42	57	3083		
3	Regulus W.	89	25	48	2768	91	0	58	2782	92	35	50	2795	94	10	25	2808	97	10	25	2821	100	10	25	2834	
	Spica η W.	35	25	25	2782	37	0	17	2794	38	34	53	2806	40	9	13	2818	43	9	13	2830	46	9	13	2842	
	Saturn E.	43	2	12	2807	41	27	53	2820	39	53	51	2835	38	20	8	2849	36	20	8	2863	34	20	8	2877	
	Jupiter E.	43	51	8	2839	42	17	31	2853	40	44	12	2866	39	11	10	2880	37	11	10	2894	35	11	10	2908	
	α Aquilæ E.	68	50	19	3464	67	29	14	3494	66	8	43	3525	64	48	47	3556	62	48	47	3587	60	48	47	3618	
	Sun E.	77	19	50	3124	75	52	9	3138	74	24	45	3153	72	57	39	3168	70	57	39	3183	68	57	39	3198	
	4	Regulus W.	101	59	18	3866	103	32	20	2878	105	5	7	2888	106	37	41	2898	108	37	41	2908	110	37	41	2918
Spica η W.		47	57	12	2873	49	30	6	2883	51	2	47	2894	52	35	14	2904	54	35	14	2914	56	35	14	2924	
Saturn E.		30	35	48	2912	29	3	45	2924	27	31	57	2938	26	0	26	2952	24	0	26	2966	22	0	26	2980	
Jupiter E.		31	30	10	2943	29	58	45	2954	28	27	35	2966	26	56	39	2978	24	56	39	2990	22	56	39	3002	
α Aquilæ E.		58	18	21	3741	57	2	17	3784	55	46	58	3829	54	32	26	3872	52	32	26	3915	50	32	26	3958	
Sun E.		65	46	11	3231	64	20	39	3242	62	55	20	3254	61	30	15	3266	59	30	15	3278	57	30	15	3290	
5		Regulus W.	114	17	23	3946	115	48	44	3954	117	19	55	3962	118	50	56	3970	120	50	56	3978	122	50	56	3986
	Spica η W.	60	14	34	2946	61	45	54	2955	63	17	3	2962	64	48	3	2970	66	48	3	2978	68	48	3	2986	
	Antares W.	14	24	44	2939	15	56	13	2947	17	27	32	2955	18	58	41	2963	20	58	41	2971	22	58	41	2979	
	Sun E.	54	28	0	3816	53	4	7	3226	51	40	25	3234	50	16	52	3242	48	16	52	3250	46	16	52	3258	
	6	Spica η W.	72	20	50	3008	73	50	59	3008	75	21	2	3013	76	50	58	3018	78	50	58	3023	80	50	58	3028
		Antares W.	26	32	12	2995	28	2	31	3001	29	32	42	3007	31	2	46	3013	33	2	46	3019	35	2	46	3025
		Sun E.	43	21	30	3380	41	58	51	3386	40	36	19	3393	39	13	54	3400	37	13	54	3407	35	13	54	3414
7		Spica η W.	84	19	8	3041	85	48	30	3045	87	17	47	3048	88	47	0	3051	90	47	0	3054	92	47	0	3057
		Antares W.	38	31	37	3033	40	1	7	3039	41	30	32	3041	42	59	54	3043	44	59	54	3045	46	59	54	3047
		Sun E.	32	23	31	3426	31	1	44	3431	29	40	3	3435	28	18	26	3439	26	18	26	3443	24	18	26	3447
		12	Sun W.	22	0	26	3443	23	21	54	3439	24	43	27	3438	26	5	6	3432	28	5	6	3426	30	5	6
	α Arietis E.		50	17	53	3069	48	49	5	3067	47	20	15	3064	45	51	21	3061	43	51	21	3058	41	51	21	3055
	Aldebaran E.		82	51	42	3105	81	23	38	3103	79	55	32	3099	78	27	21	3095	76	27	21	3091	74	27	21	3087
	Pollux E.		125	0	40	3076	123	32	1	3071	122	3	16	3067	120	34	26	3063	118	34	26	3059	116	34	26	3055
13	Sun W.	32	54	53	3401	34	17	9	3394	35	39	33	3388	37	2	3	3382	39	2	3	3376	41	2	3	3370	
	α Arietis E.	38	26	14	3051	36	57	4	3050	35	27	53	3047	33	58	38	3044	31	58	38	3041	29	58	38	3038	
	Aldebaran E.	71	5	33	3080	69	36	59	3076	68	8	20	3073	66	39	38	3069	64	39	38	3065	62	39	38	3061	

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.		Midnight.	P. L. of diff.	XV ^h .	P. L. of diff.	XVIII ^h .	P. L. of diff.	XXI ^h .	P. L. of diff.
		° ' "		° ' "		° ' "		° ' "	
Pollux	W.	106 53 5	2604	108 31 55	2621	110 10 22	2637	111 48 26	2654
Regulus	W.	69 58 11	2585	71 37 27	2602	73 16 20	2618	74 54 51	2634
Spica η	W.	16 7 20	2659	17 44 55	2663	19 22 25	2669	20 59 46	2678
Antares	E.	29 58 29	2579	28 19 5	2596	26 40 4	2612	25 1 25	2629
Saturn	E.	62 20 22	2618	60 41 51	2635	59 3 44	2652	57 25 59	2668
Jupiter	E.	63 0 30	2651	61 22 44	2668	59 45 21	2685	58 8 21	2702
α Aquilæ	E.	85 41 21	3173	84 14 40	3194	82 48 23	3215	81 22 31	3237
SUN	E.	95 17 52	2924	93 46 3	2942	92 14 37	2959	90 43 33	2978
Pollux	W.	119 53 11	2736	121 29 3	2752	123 4 34	2768	124 39 44	2783
Regulus	W.	83 2 4	2711	84 38 29	2726	86 14 34	2740	87 50 21	2755
Spica η	W.	29 3 17	2733	30 39 13	2745	32 14 53	2757	33 50 17	2769
Antares	E.	16 53 37	2707	15 17 6	2722	13 40 55	2737	12 5 4	2751
Saturn	E.	49 22 41	2747	47 47 4	2763	46 11 48	2777	44 36 50	2792
Jupiter	E.	50 8 44	2781	48 33 51	2795	46 59 17	2811	45 25 4	2825
α Aquilæ	E.	74 19 49	3355	72 56 41	3381	71 34 3	3408	70 11 55	3436
SUN	E.	83 13 40	3062	81 44 44	3078	80 16 7	3093	78 47 49	3109
Regulus	W.	95 44 44	2820	97 18 46	2832	98 52 32	2845	100 26 2	2856
Spica η	W.	41 43 18	2829	43 17 8	2840	44 50 44	2852	46 24 5	2863
Saturn	E.	36 46 42	2863	35 13 34	2874	33 40 42	2887	32 8 7	2900
Jupiter	E.	37 38 26	2893	36 5 58	2905	34 33 46	2919	33 1 51	2930
α Aquilæ	E.	63 29 26	3590	62 10 41	3625	60 52 34	3662	59 35 7	3701
SUN	E.	71 30 50	3180	70 4 17	3194	68 38 0	3206	67 11 58	3219
Regulus	W.	108 10 2	2909	109 42 10	2918	111 14 6	2928	112 45 50	2936
Spica η	W.	54 7 29	2912	55 39 33	2922	57 11 24	2930	58 43 5	2939
Saturn	E.	24 29 10	2962	22 58 10	2974	21 27 25	2989	19 56 58	3001
Jupiter	E.	25 25 57	2989	23 55 30	2999	22 25 16	3010	20 55 16	3022
α Aquilæ	E.	53 18 42	3926	52 5 49	3980	50 53 50	4037	49 42 47	4100
SUN	E.	60 5 24	3277	58 40 43	3287	57 16 18	3297	55 52 3	3307
Regulus	W.	120 21 48	2977	121 52 30	2985	123 23 2	2991	124 53 26	2998
Spica η	W.	66 18 53	2977	67 49 35	2984	69 20 8	2990	70 50 33	2997
Antares	W.	20 29 40	2970	22 0 31	2977	23 31 13	2983	25 1 47	2990
SUN	E.	48 53 30	3351	47 30 17	3359	46 7 13	3365	44 44 17	3373
Spica η	W.	78 20 47	3023	79 50 31	3028	81 20 9	3033	82 49 41	3038
Antares	W.	32 32 44	3017	34 2 36	3022	35 32 22	3026	37 2 2	3031
SUN	E.	37 51 37	3405	36 29 26	3411	35 7 22	3416	33 45 23	3422
Spica η	W.	90 16 9	3054	91 45 15	3058	93 14 16	3060	94 43 15	3063
Antares	W.	44 29 11	3048	45 58 24	3051	47 27 33	3053	48 56 40	3056
SUN	E.	26 56 56	3445	25 35 30	3449	24 14 9	3454	22 52 53	3459
SUN	W.	27 26 52	3423	28 48 43	3417	30 10 40	3411	31 32 44	3407
α Arietis	E.	44 22 25	3060	42 53 26	3058	41 24 25	3056	39 55 21	3053
Aldebaran	E.	76 59 8	3093	75 30 50	3090	74 2 28	3087	72 34 3	3083
Pollux	E.	119 5 31	3058	117 36 30	3052	116 7 22	3048	114 38 9	3043
SUN	W.	38 24 40	3376	39 47 24	3368	41 10 17	3361	42 33 18	3354
α Arietis	E.	32 29 22	3044	31 0 4	3048	29 30 45	3043	28 1 25	3043
Aldebaran	E.	65 10 30	3065	63 41 58	3061	62 13 0	3057	60 43 58	3053

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.	Midnight.	P.L. of diff.	XV ^h .			P.L. of diff.	XVIII ^h .			P.L. of diff.	XXI ^h .			P.L. of diff.
			°	'	"		°	'	"		°	'	"	
Pollux E.	107 10 22	3014	103 40 27	3009	104 10 25	3002	102 40 14	2994						
SUN W.	49 30 34	3313	50 54 30	3304	52 18 37	3295	53 42 54	3285						
Mars W.	15 50 10	3435	17 11 47	3394	18 34 10	3358	19 57 14	3329						
α Arietis E.	20 35 26	3068	19 6 37	3083	17 38 6	3103	16 10 0	3132						
Aldebaran E.	53 17 31	3032	51 47 58	3029	50 18 21	3024	48 48 38	3021						
Pollux E.	95 7 7	2958	93 36 1	2950	92 4 45	2940	90 33 17	2932						
SUN W.	60 47 19	3232	62 12 50	3220	63 38 35	3208	65 4 35	3197						
Mars W.	27 0 8	3216	28 25 58	3198	29 52 10	3180	31 18 43	3162						
Aldebaran E.	41 19 6	3008	39 49 3	3008	38 19 0	3007	36 48 56	3009						
Pollux E.	82 53 8	2884	81 20 29	2873	79 47 36	2863	78 14 29	2852						
Regulus E.	119 50 12	2868	118 17 12	2857	116 43 58	2846	115 10 30	2835						
SUN W.	72 18 19	3130	73 45 52	3115	75 13 44	3101	76 41 53	3086						
Mars W.	38 36 36	3078	40 5 12	3063	41 34 7	3046	43 3 23	3029						
Aldebaran E.	29 19 50	3048	27 50 36	3065	26 21 43	3089	24 53 20	3119						
Pollux E.	70 25 17	2792	68 50 39	2781	67 15 46	2767	65 40 35	2754						
Regulus E.	107 19 19	2773	105 44 16	2760	104 8 55	2746	102 33 16	2732						
SUN W.	84 7 17	3007	85 37 21	2990	87 7 46	2973	88 38 33	2956						
Mars W.	50 34 56	2944	52 6 19	2927	53 38 4	2909	55 10 12	2891						
α Arietis W.	18 13 21	2800	19 47 49	2763	21 23 6	2730	22 59 6	2701						
Aldebaran E.	17 45 25	3497	16 24 57	3663	15 7 30	3892	13 54 2	4215						
Pollux E.	57 40 18	2687	56 3 20	2672	54 26 3	2658	52 48 27	2643						
Regulus E.	94 30 21	2659	92 52 46	2644	91 14 51	2628	89 36 34	2613						
SUN W.	96 17 55	2867	97 50 56	2849	99 24 20	2830	100 58 9	2812						
Mars W.	62 56 36	2800	64 31 4	2781	66 5 57	2763	67 41 14	2744						
α Arietis W.	31 8 8	2579	32 47 33	2557	34 27 28	2535	36 7 52	2515						
Pollux E.	44 35 33	2572	42 56 0	2559	41 16 9	2545	39 35 58	2532						
Regulus E.	81 19 40	2530	79 39 8	2513	77 58 13	2497	76 16 55	2479						
SUN W.	108 53 13	2719	110 29 27	2700	112 6 7	2681	113 43 12	2663						
Mars W.	75 43 51	2650	77 21 38	2632	78 59 50	2613	80 38 28	2594						
α Arietis W.	44 36 58	2416	46 20 10	2396	48 3 51	2377	49 47 58	2359						
Pollux E.	31 10 48	2477	29 29 2	2470	27 47 7	2465	26 5 4	2463						
Regulus E.	67 44 17	2392	66 0 31	2375	64 16 21	2358	62 31 46	2341						
SUN W.	121 54 47	2573	123 34 19	2556	125 14 13	2538	126 54 33	2523						
Mars W.	88 57 55	2503	90 39 4	2487	92 20 36	2469	94 2 33	2453						
α Arietis W.	58 35 14	2268	60 22 0	2252	62 9 11	2235	63 56 47	2218						
Aldebaran W.	27 26 29	2335	29 6 54	2487	30 48 23	2446	32 30 54	2408						
Pollux E.	17 36 19	2541	15 56 3	2597	14 17 4	2684	12 40 2	2820						
Regulus E.	53 42 39	2257	51 55 36	2241	50 8 10	2226	48 20 21	2210						
Spica η E.	107 45 35	2255	105 58 29	2239	104 11 0	2223	102 23 6	2206						
SUN W.	133 21 55	2444	137 4 27	2431	138 47 18	2417	140 30 23	2403						
Mars W.	102 38 4	2374	104 22 16	2360	106 6 49	2346	107 51 42	2333						
α Arietis W.	73 8 58	2141	74 50 47	2126	76 41 6	2113	78 31 43	2100						
Aldebaran W.	41 15 26	2268	43 2 21	2239	44 49 50	2218	46 37 51	2198						
Regulus E.	39 13 36	2139	37 25 37	2126	35 35 18	2118	33 44 41	2103						
Spica η E.	93 17 42	2131	91 27 30	2117	89 36 57	2103	87 46 3	2091						

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.			P. L. of diff.			III ^h .			P. L. of diff.			VI ^h .			P. L. of diff.			IX ^h .				
		°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"		
22	Mars W.	109	36	54	2320	111	22	24	2309	113	8	11	2297	114	54	15	2297	114	54	15	2297	114	54	15
	α Arietis W.	80	22	41	2087	82	14	3	2076	84	5	39	2064	85	57	34	2064	85	57	34	2064	85	57	34
	Aldebaran W.	48	26	22	2179	50	15	22	2162	52	4	47	2145	53	54	37	2145	53	54	37	2145	53	54	37
	Pollux W.	7	52	36	3493	9	13	8	3005	10	43	15	2718	12	19	34	2718	12	19	34	2718	12	19	34
	Regulus E.	31	53	47	2094	30	2	38	2084	28	11	14	2076	26	19	38	2076	26	19	38	2076	26	19	38
Spica ♀ E.	85	54	50	2079	84	3	18	2066	82	11	27	2056	80	19	20	2056	80	19	20	2056	80	19	20	
23	α Arietis W.	95	20	54	2010	97	14	12	2003	99	7	41	1998	101	1	19	1998	101	1	19	1998	101	1	19
	Aldebaran W.	63	9	2	2070	65	0	47	2062	66	52	45	2053	68	44	57	2053	68	44	57	2053	68	44	57
	Pollux W.	21	4	32	2164	22	53	54	2134	24	44	2	2107	26	34	50	2107	26	34	50	2107	26	34	50
	Spica ♀ E.	70	54	56	2002	69	1	25	1996	67	7	44	1989	65	13	53	1989	65	13	53	1989	65	13	53
	Antares E.	116	40	5	1998	114	46	23	1988	112	52	30	1982	110	58	28	1982	110	58	28	1982	110	58	28
24	α Arietis W.	110	30	58	1980	112	25	3	1981	114	19	8	1982	116	13	11	1982	116	13	11	1982	116	13	11
	Aldebaran W.	78	8	5	2026	80	0	59	2025	81	53	54	2025	83	46	50	2025	83	46	50	2025	83	46	50
	Pollux W.	35	55	9	2028	37	48	0	2021	39	41	1	2017	41	34	8	2017	41	34	8	2017	41	34	8
	Spica ♀ E.	55	43	12	1972	53	48	54	1973	51	54	37	1974	50	0	21	1974	50	0	21	1974	50	0	21
	Antares E.	101	26	41	1963	99	32	8	1963	97	37	35	1963	95	43	3	1963	95	43	3	1963	95	43	3
25	Aldebaran W.	93	10	42	2043	95	3	9	2050	96	55	25	2057	98	47	31	2057	98	47	31	2057	98	47	31
	Pollux W.	51	0	6	2020	52	53	9	2024	54	46	6	2029	56	38	53	2029	56	38	53	2029	56	38	53
	Regulus W.	14	1	25	2068	15	53	13	2056	17	45	20	2051	19	37	35	2051	19	37	35	2051	19	37	35
	Spica ♀ E.	40	30	13	1998	38	36	36	2003	36	43	10	2014	34	49	57	2014	34	49	57	2014	34	49	57
	Antares E.	86	11	16	1982	84	17	14	1989	82	23	22	1993	80	29	40	1993	80	29	40	1993	80	29	40
	Saturn E.	120	43	38	2010	118	50	20	2016	116	57	11	2025	115	4	12	2025	115	4	12	2025	115	4	12
	Jupiter E.	123	51	11	2037	121	58	34	2043	120	6	6	2050	118	13	49	2050	118	13	49	2050	118	13	49
26	Aldebaran W.	108	4	24	2119	109	54	54	2132	111	45	4	2146	113	34	53	2146	113	34	53	2146	113	34	53
	Pollux W.	66	0	11	2079	67	51	43	2089	69	42	59	2101	71	33	56	2101	71	33	56	2101	71	33	56
	Regulus W.	28	58	16	2074	30	49	56	2083	32	41	21	2094	34	32	29	2094	34	32	29	2094	34	32	29
	Spica ♀ E.	25	28	9	2088	23	36	51	2106	21	46	1	2126	19	55	41	2126	19	55	41	2126	19	55	41
	Antares E.	71	4	32	2051	69	12	17	2063	67	20	21	2075	65	28	44	2075	65	28	44	2075	65	28	44
	Saturn E.	105	42	36	2079	103	51	4	2090	101	59	50	2102	100	8	54	2102	100	8	54	2102	100	8	54
	Jupiter E.	108	55	39	2105	107	4	48	2117	105	14	15	2130	103	24	1	2130	103	24	1	2130	103	24	1
α Aquilæ E.	120	58	0	2082	119	25	18	2063	117	52	11	2048	116	18	46	2048	116	18	46	2048	116	18	46	
27	Pollux W.	80	43	40	2185	82	32	30	2200	84	20	57	2217	86	8	59	2217	86	8	59	2217	86	8	59
	Regulus W.	43	43	31	2178	45	32	40	2188	47	21	25	2204	49	9	47	2204	49	9	47	2204	49	9	47
	Antares E.	56	15	55	2162	54	26	30	2177	52	37	28	2194	50	48	52	2194	50	48	52	2194	50	48	52
	Saturn E.	90	59	30	2189	89	10	46	2204	87	22	25	2221	85	34	29	2221	85	34	29	2221	85	34	29
	Jupiter E.	94	18	5	2216	92	30	1	2233	90	42	22	2249	88	55	7	2249	88	55	7	2249	88	55	7
	α Aquilæ E.	108	29	7	2219	106	55	4	2225	105	21	5	2228	103	47	14	2228	103	47	14	2228	103	47	14
	SUN E.	147	7	3	2491	145	25	37	2507	143	44	34	2524	142	3	54	2524	142	3	54	2524	142	3	54
28	Pollux W.	95	2	47	2223	96	48	13	2242	98	33	12	2261	100	17	43	2261	100	17	43	2261	100	17	43
	Regulus W.	58	5	22	2207	59	51	11	2226	61	36	33	2244	63	21	29	2244	63	21	29	2244	63	21	29
	Antares E.	41	52	15	2200	40	6	15	2218	38	20	42	2237	36	35	37	2237	36	35	37	2237	36	35	37
	Saturn E.	76	41	13	2227	74	55	53	2246	73	11	0	2264	71	26	34	2264	71	26	34	2264	71	26	34
	Jupiter E.	80	5	17	2226	78	20	39	2245	76	9	22	2263	74	52	42	2263	74	52	42	2263	74	52	42
	α Aquilæ E.	96	0	51	2228	94	28	23	2247	92	17	16	2266	90	4	28	2266	90	4	28	2266	90	4	28
	SUN E.	133	46	32	2528	132	8	20	2545	130	34	13	2562	128	22	29	2562	128	22	29	2562	128	22	29

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.	Midnight.	P.L. of diff.	XV ^h .	P.L. of diff.	XVIII ^h .	P.L. of diff.	XXI ^h .	P.L. of diff.
Mars W.	116 40 35	2277	118 27 9	2268	120 13 56	2260	122 0 55	2252
α Arietis W.	87 49 45	2044	89 42 11	2034	91 34 52	2025	93 27 47	2017
Aldebaran W.	55 44 51	2116	57 35 25	2103	59 26 19	2091	61 17 32	2080
Pollux W.	14 0 3	2407	15 43 28	2319	17 29 0	2253	19 16 9	2203
Regulus E.	24 27 51	2064	22 35 56	2060	20 43 56	2060	18 51 55	2062
Spica ♀ E.	78 26 56	2035	76 34 16	2026	74 41 23	2017	72 48 15	2010
α Arietis W.	102 55 4	1989	104 48 56	1986	106 42 53	1982	108 36 54	1981
Aldebaran W.	70 37 19	2041	72 29 50	2035	74 22 29	2031	76 15 15	2028
Pollux W.	28 26 10	2070	30 17 56	2056	32 10 3	2044	34 2 29	2035
Spica ♀ E.	63 19 55	1981	61 25 51	1978	59 31 42	1975	57 27 28	1973
Antares E.	109 4 18	1973	107 10 0	1970	105 13 38	1967	103 21 11	1965
α Arietis W.	118 7 11	1986	120 1 7	1990	121 54 57	1995	123 48 40	2000
Aldebaran W.	85 39 45	2027	87 32 37	2030	89 25 24	2033	91 18 7	2038
Pollux W.	43 27 19	2014	45 20 32	2014	47 13 45	2014	49 6 57	2016
Spica ♀ E.	48 6 8	1978	46 11 59	1982	44 17 56	1986	42 24 0	1992
Antares E.	93 48 32	1967	91 54 5	1969	89 59 42	1973	88 5 25	1978
Aldebaran W.	100 39 24	2074	102 31 3	2084	104 22 27	2094	106 13 35	2107
Pollux W.	58 31 35	2042	60 24 4	2050	62 16 20	2059	64 8 23	2068
Regulus W.	21 29 54	2050	23 22 10	2053	25 14 21	2059	27 6 24	2066
Spica ♀ E.	32 56 59	2034	31 4 17	2046	29 11 54	2058	27 19 50	2073
Antares E.	78 36 10	2011	76 42 53	2020	74 49 50	2030	72 57 3	2041
Saturn E.	113 11 25	2039	111 18 51	2048	109 26 31	2057	107 34 26	2067
Jupiter E.	116 21 43	2065	114 29 50	2074	112 38 11	2084	110 46 47	2094
Aldebaran W.	115 24 19	2177	117 13 21	2194	119 1 57	2211	120 50 8	2229
Pollux W.	73 24 34	2126	75 14 53	2141	77 4 50	2155	78 54 26	2169
Regulus W.	36 23 21	2117	38 13 54	2130	40 4 7	2143	41 54 0	2158
Spica ♀ E.	18 5 56	2176	16 16 52	2208	14 28 36	2248	12 41 20	2304
Antares E.	63 37 27	2102	61 46 31	2117	59 55 57	2131	58 5 45	2146
Saturn E.	98 18 19	2129	96 28 4	2143	94 38 10	2158	92 48 39	2173
Jupiter E.	101 34 7	2157	99 44 34	2170	97 55 21	2186	96 6 32	2200
α Aquilæ E.	114 45 5	2228	113 11 14	2222	111 37 15	2218	110 3 11	2218
Pollux W.	87 56 36	2251	89 43 48	2268	91 30 34	2286	93 16 54	2304
Regulus W.	50 57 45	2237	52 45 17	2254	54 32 25	2272	56 19 6	2289
Antares E.	49 0 40	2229	47 12 55	2245	45 25 35	2264	43 38 42	2281
Saturn E.	83 46 57	2258	81 59 52	2278	80 13 13	2290	78 26 59	2309
Jupiter E.	87 8 17	2283	85 21 53	2301	83 35 55	2319	81 50 23	2337
α Aquilæ E.	102 13 31	2243	100 39 59	2254	99 6 41	2266	97 33 38	2278
SUN E.	140 23 36	2558	138 43 43	2576	137 4 15	2593	135 25 11	2612
Pollux W.	102 1 48	2399	103 45 24	2419	105 28 33	2438	107 11 14	2458
Regulus W.	65 5 58	2381	66 50 0	2401	68 33 34	2419	70 16 42	2438
Antares E.	34 50 58	2375	33 6 48	2394	31 23 4	2413	29 39 48	2433
Saturn E.	69 42 36	2403	67 59 5	2422	66 16 1	2441	64 33 25	2460
Jupiter E.	73 9 24	2431	71 26 34	2450	69 44 11	2470	68 2 16	2489
α Aquilæ E.	89 53 3	2962	88 22 3	2982	86 51 28	3003	85 21 19	3025
SUN E.	127 16 21	2710	125 39 54	2731	124 3 55	2750	122 28 22	2771

CONFIGURATIONS OF THE SATELLITES OF JUPITER,

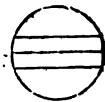
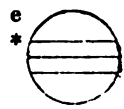
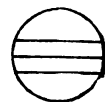
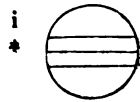
At 18^h 30^m, MEAN TIME.

Day of the Month.	<i>West.</i>				<i>East.</i>			
1					.14	○	2.	3.
2							3	○
3					4.	3.	.2	○ .1
4					4.	.3	1.	○ .2
5					.4		.2	○ .1
6					.4		.3 .1	○ .3
7					.4			○ .21. .3
8						.4	.1	○ 2. 3.
9							2. 4	○ 1. 3.
10	.1	●				3.	.2	○ .4
11						.3	1.	○ .2 .4
12						.3		○ 2. .1 .4
13						.2	1.	○ .3 .4
14								○ .2 1. .3 .4
15							.1	○ 2. 3. 4.
16							2.	○ 1. 3. 4.
17	.1	●					3. 2	○ 4.
18	1.	○				3.		○ .2 ○
19						.2		○ .1 2.
20						4.	4.	○ 2. 1.
21						4.		○ .1 .3 ●
22						.4		○ .1 .3 ●
23						.4		○ 2. 3.
24						.4		○ 2. 3. 1.
25							3. 4	○ .2 ○
26							.3	○ .4 ○ 1 2.
27							2. 1.	○ .4 ●
28	.2	●						○ .1 .3 .4

This Table represents, at 18^h 30^m after Mean Noon of each day of the month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page; the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the numeral. A white circle (○) at the left or right hand of the page, denotes that the Satellite placed by the side of it is on the disc of Jupiter, and a black circle (●) that it is either *behind* the disc, or in the shadow, of Jupiter.

ECLIPSES OF THE SATELLITES OF JUPITER.

LITR.	Day of the Month.	Mean Time.	Sideral Time.	PHASE as seen in an inverting Telescope.
	1	^h 19 ^m 52 ^s 27·4	^h 16 ^m 40 ^s 50·7	Im.
	3	14 20 54·3	11 16 16·3	Im.
	5	8 49 16·7	5 51 37·3	Im.
	7	3 17 41·1	0 27 0·3	Im.
	8	21 46 3·1	19 2 20·9	Im.
	10	16 14 29·4	13 37 45·9	Im.
	12	10 42 51·2	8 13 6·3	Im.
	14	5 11 15·2	2 48 29·0	Im.
	15	23 39 36·5	21 23 48·9	Im.
	17†	18 8 2·3	15 59 13·4	Im.
	19	12 36 23·6	10 34 33·3	Im.
	21	7 4 47·4	5 9 55·7	Im.
	23	1 33 7·9	23 45 14·8	Im.
	24	20 1 33·5	18 20 39·0	Im.
	26	14 29 54·4	12 55 58·6	Im.
	28	8 58 18·0	7 31 20·8	Im.
	3	21 19 45·0	18 16 15·8	Im.
	7	10 37 14·5	7 47 46·0	Im.
	10	23 55 24·4	21 19 56·6	Im.
	14	13 12 50·0	10 51 22·8	Im.
	18	2 30 52·1	0 23 25·7	Im.
	21	15 48 13·8	13 54 48·1	Im.
	25	5 6 7·6	3 26 42·6	Im.
	28†	18 23 25·5	16 58 1·2	Im.
I.	6	5 59 56·5	3 5 45·9	Im.
	13	9 58 22·5	7 32 26·9	Im.
	13	12 59 8·7	10 33 42·7	Em.
	20	13 57 6·4	11 59 25·9	Im.
	20	16 58 43·4	15 1 32·7	Em.
	27*	17 55 13·4	16 25 47·9	Im.
	27	20 57 40·8	19 28 45·2	Em.
V.	9	22 23 11·7	19 43 32·2	Im.
	9	23 53 5·8	21 13 41·1	Em.
	26	16 15 40·9	14 42 2·4	Im.
	26*	18 3 46·8	16 30 26·1	Em.



APPROXIMATE SIDEREAL TIMES
OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER
AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.			TRANSITS OF SATELLITES.				TRANSITS OF SHAD		
	Immersion.	Emersion.		Ingress.	Egress.		Ingress.	Eg		
I.	d h m	d h m		d h m	d h m		d h m	d		
		1 19 38		0 20 7	1 22 25		0 19 26	1 2		
		3 14 15		2 14 44	2 17 2		2 14 2	2† 11		
		5 8 52		4 9 21	4 11 39		4 8 37	4 11		
		7 3 29		6 3 58	6 6 16		6 3 13	6 11		
		9 22 6		8 22 35	8 0 53		8 21 48	8 11		
	In	10† 16 43		9 17 12	9 19 30		9† 16 23	9 11		
	the	12 11 19		11 11 49	11 14 7		11 10 59	11 11		
		14 5 56		13 6 26	13 8 44		13 5 34	13 7		
	Shadow.	16 0 33		15 1 3	15 3 21		15 0 10	15 2		
		17 19 10		16 19 40	17 21 58		16 18 45	16 21		
		19 13 47		18 14 16	18† 16 35		18 13 21	18† 15		
		21 8 23		20 8 53	20 11 11		20 7 56	20 10		
		23 3 0		22 3 30	22 5 48		22 2 31	22 4		
		24 21 37		23 22 6	24 0 25		23 21 7	24 23		
		26† 16 14		25† 16 43	25 19 1		25† 15 42	25 18		
		28 10 50		27 11 20	27 13 38		27 10 18	27 12		
II.		4 22 31		2 0 28	2 3 17		2 23 4	2 1		
	In	7 12 9		5 14 5	5 16 55		5 12 35	5† 15		
	the	11 1 48		9 3 43	9 6 33		9 2 6	9 4		
	Shadow.	14† 15 25		12 17 20	12 20 10		12† 15 37	12 18		
		18 5 3		16 6 57	16 9 47		16 5 8	16 7		
		21 18 40		19 20 33	20 23 24		19 18 39	19 21		
		25 8 17		23 10 10	23 13 1		23 8 11	23 11		
		28 21 54		27 23 46	27 2 37		26 21 42	27 0		
III.	In the Shadow.	6 9 18		2† 15 51	2 19 4		2 13 1	2† 16		
		13 10 55		9 20 43	10 23 58		9 17 27	9 20		
		20† 15 45		17 1 33	17 4 49		17 21 54	17 1		
		27 20 32		24 6 22	24 9 39		24 2 21	24 5		
IV.		10 3 1		1 17 11	1 19 11		1 11 1	1 12		
		27 0 1		18 14 24	18† 16 46		18 6 2	18 7		

For correcting the Places of the Fixed Stars.

At Mean Midnight,

Logarithm of

Mean Time
of
Transit
of the
First Point of
Aries.

Mean Equinoctial Time,
adding 0^s.809526.
Days.

From Mean
Noon of
January 1.

Day of the Year.
Fraction of the Year.

Logarithm of				Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0 ^s .809526. Days.	From Mean Noon of January 1.	
A	B	C	D			Day of the Year.	Fraction of the Year.
-1.1035	+1.1743	+9.6101	-0.6554	3 14 20.65	315	31	.085
1.1116	1.1671	9.6132	0.6565	3 10 24.74	316	32	.088
1.1195	1.1596	9.6163	0.6576	3 6 28.83	317	33	.090
-1.1271	+1.1518	+9.6193	-0.6588	3 2 32.92	318	34	.093
1.1344	1.1437	9.6223	0.6599	2 58 37.01	319	35	.096
1.1415	1.1354	9.6252	0.6610	2 54 41.10	320	36	.099
-1.1483	+1.1268	+9.6281	-0.6622	2 50 45.20	321	37	.101
1.1549	1.1178	9.6309	0.6633	2 46 49.29	322	38	.104
1.1612	1.1085	9.6337	0.6644	2 42 53.38	323	39	.107
-1.1673	+1.0989	+9.6364	-0.6654	2 38 57.47	324	40	.110
1.1732	1.0890	9.6390	0.6665	2 35 1.56	325	41	.112
1.1789	1.0787	9.6417	0.6675	2 31 5.65	326	42	.115
-1.1844	+1.0679	+9.6443	-0.6685	2 27 9.74	327	43	.118
1.1897	1.0568	9.6468	0.6695	2 23 13.83	328	44	.120
1.1947	1.0453	9.6493	0.6704	2 19 17.92	329	45	.123
-1.1996	+1.0333	+9.6517	-0.6714	2 15 22.01	330	46	.126
1.2043	1.0208	9.6541	0.6723	2 11 26.10	331	47	.129
1.2088	1.0079	9.6565	0.6731	2 7 30.19	332	48	.131
-1.2131	+0.9944	+9.6588	-0.6740	2 3 34.29	333	49	.134
1.2173	0.9803	9.6611	0.6748	1 59 38.38	334	50	.137
1.2212	0.9657	9.6634	0.6755	1 55 42.47	335	51	.140
-1.2250	+0.9504	+9.6656	-0.6762	1 51 46.56	336	52	.142
1.2287	0.9344	9.6678	0.6769	1 47 50.65	337	53	.145
1.2321	0.9176	9.6700	0.6776	1 43 54.74	338	54	.148
-1.2354	+0.9001	+9.6721	-0.6782	1 39 58.84	339	55	.151
1.2386	0.8817	9.6742	0.6787	1 36 2.93	340	56	.153
1.2416	0.8624	9.6763	0.6792	1 32 7.02	341	57	.156
1.2444	0.8420	9.6783	0.6797	1 28 11.11	342	58	.159
-1.2471	+0.8205	+9.6803	-0.6801	1 24 15.20	343	59	.162

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Spherical Time of the Semidiam. passing the Meridian.*	Equation of Time, to be added to Apparent Time.
		Apparent Right Ascension.	Diff. for 1 hour.	Apparent Declination.	Diff. for 1 hour.		
Tues.	1	22 ^h 48 ^m 12 ^s 11	9° 246	S. 7° 37' 5" 8	57° 07'	1 5' 36"	12 29' 07"
Wed.	2	22 51 36 42	9° 227	7 14 16 2	57 08	1 5 29	12 26 87
Thur.	3	22 55 40 26	9° 308	6 51 20 3	57 07	1 5 22	12 14 19
Frid.	4	22 59 23 64	9° 290	6 28 18 6	57 00	1 5 15	12 1 05
Sat.	5	23° 3 6 39	9° 272	6 5 11 3	56 01	1 5 08	11 47 48
Sun.	6	23 6 49 11	9° 255	5 41 58 9	56 20	1 5 02	11 33 49
Mon.	7	23 10 31 23	9° 239	5 18 41 9	56 29	1 4 56	11 19 09
Tues.	8	23 14 12 96	9° 222	4 55 20 6	56 35	1 4 50	11 4 31
Wed.	9	23 17 34 32	9° 209	4 31 55 4	56 70	1 4 85	10 49 16
Thur.	10	23 21 35 33	9° 195	4 8 26 7	56 38	1 4 80	10 33 66
Frid.	11	23 25 16 02	9° 182	3 44 54 9	56 34	1 4 75	10 17 84
Sat.	12	23 28 56 38	9° 169	3 21 20 4	56 08	1 4 71	10 1 69
Sun.	13	23 29 36 44	9° 158	2 57 43 7	56 10	1 4 67	9 45 24
Mon.	14	23 26 16 22	9° 146	2 34 5 2	56 17	1 4 63	9 28 31
Tues.	15	23 29 55 73	9° 135	2 10 25 1	56 21	1 4 59	9 11 52
Wed.	16	23 43 34 98	9° 126	1 46 44 0	56 25	1 4 56	8 54 26
Thur.	17	23 47 14 01	9° 118	1 23 2 1	56 26	1 4 53	8 36 79
Frid.	18	23 50 52 83	9° 109	0 59 20 0	56 26	1 4 50	8 19 10
Sat.	19	23 54 31 45	9° 102	0 35 37 9	56 24	1 4 48	8 1 22
Sun.	20	23 58 9 89	9° 096	S. 0 11 56 2	56 22	1 4 46	7 43 16
Mon.	21	0 1 48 19	9° 090	N. 0 11 44 9	56 17	1 4 44	7 24 94
Tues.	22	0 5 26 36	9° 086	0 35 24 7	56 10	1 4 42	7 6 61
Wed.	23	0 9 4 42	9° 082	0 59 3 2	56 02	1 4 41	6 48 17
Thur.	24	0 12 42 39	9° 080	1 22 39 8	56 08	1 4 40	6 29 64
Frid.	25	0 16 20 30	9° 078	1 46 14 3	56 04	1 4 40	6 11 04
Sat.	26	0 19 58 17	9° 077	2 9 46 5	56 03	1 4 39	5 52 42
Sun.	27	0 23 36 03	9° 078	2 23 16 0	56 00	1 4 39	5 33 78
Mon.	28	0 27 13 90	9° 079	2 56 42 3	56 06	1 4 39	5 15 14
Tues.	29	0 30 51 80	9° 081	3 20 5 3	56 20	1 4 40	4 56 54
.	30	0 34 29 75	9° 085	3 43 24 5	56 13	1 4 40	4 37 99
.	31	0 38 7 79	9° 089	4 6 39 6	57 08	1 4 41	4 19 52
.	32	0 41 45 93		N. 4 29 50 4		1 4 42	

* Mean Time of the Semidiameter passing may be found by subtracting 0^m 18 from

AT MEAN NOON.

Day of the Month.	THE SUN'S			Equation of Time, to be subtracted from Mean Time.	Sidereal Time.
	Apparent Right Ascension.	Apparent Declination.	Semidiam.*		
1	22 48 10.13	S. 7 37 17.8	16 9.2	12 39.18	22 35 30.96
2	22 51 54.49	7 14 28.0	16 8.9	12 26.98	22 39 27.51
3	22 55 38.37	6 51 32.0	16 8.7	12 14.30	22 43 24.06
4	22 59 21.78	6 23 30.1	16 8.4	12 1.16	22 47 20.62
5	23 3 4.77	6 5 22.6	16 8.2	11 47.59	22 51 17.17
6	23 6 47.33	5 42 10.1	16 7.9	11 33.60	22 55 13.72
7	23 10 29.48	5 18 52.9	16 7.6	11 19.21	22 59 10.28
8	23 14 11.25	4 55 31.4	16 7.4	11 4.42	23 3 6.83
9	23 17 52.66	4 38 6.0	16 7.1	10 49.27	23 7 3.39
10	23 21 33.71	4 8 37.0	16 6.8	10 33.78	23 10 59.94
11	23 25 14.44	3 45 5.0	16 6.6	10 17.95	23 14 56.49
12	23 28 54.85	3 21 30.3	16 6.3	10 1.80	23 18 53.04
13	23 32 34.95	2 57 53.3	16 6.0	9 45.35	23 22 49.60
14	23 36 14.77	2 34 14.5	16 5.7	9 28.62	23 26 46.15
15	23 39 54.33	2 10 34.1	16 5.5	9 11.62	23 30 42.70
16	23 43 33.63	1 46 52.8	16 5.3	8 54.37	23 34 39.26
17	23 47 12.70	1 23 10.7	16 5.0	8 36.89	23 38 35.81
18	23 50 51.56	0 59 28.2	16 4.7	8 19.20	23 42 32.36
19	23 54 30.23	0 35 45.3	16 4.4	8 1.32	23 46 28.92
20	23 58 8.72	S. 0 12 3.8	16 4.2	7 43.25	23 50 25.47
21	0 1 47.07	N. 0 11 37.5	16 3.9	7 25.05	23 54 22.02
22	0 5 25.28	0 35 17.7	16 3.6	7 6.71	23 58 18.58
23	0 9 3.39	0 58 56.5	16 3.4	6 48.26	0 2 15.13
24	0 12 41.41	1 22 33.4	16 3.1	6 29.72	0 6 11.68
25	0 16 19.36	1 46 8.2	16 2.8	6 11.12	0 10 8.21
26	0 19 57.28	2 9 40.8	16 2.5	5 52.49	0 14 4.79
27	0 23 35.19	2 33 10.5	16 2.2	5 33.85	0 18 1.34
28	0 27 13.10	2 56 37.2	16 2.0	5 15.21	0 21 57.90
29	0 30 51.05	3 20 0.4	16 1.7	4 56.60	0 25 54.45
30	0 34 29.03	3 43 20.0	16 1.4	4 38.03	0 29 51.00
31	0 38 7.13	4 6 35.4	16 1.1	4 19.38	0 33 47.36
1842	0 41 45.32	N. 4 29 46.5	16 0.8	4 1.21	0 37 44.11

*Diameter for Apparent Noon may be assumed the same as that for Mean Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S			
	Longitude.	Latitude.		Semidiameter.		Horizontal Parallax.	
	<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>
1	340 32 27.5	S. 0° 15'	9.9962844	15 51.2	15 43.2	58 10.5	57 4
2	341 32 34.7	0 13	9.9963975	15 35.3	15 27.8	57 12.2	56 4
3	342 32 40.4	S. 0° 08'	9.9965118	15 20.7	15 14.1	56 18.6	55 3
4	343 32 44.4	0 00	9.9966272	15 8.1	15 2.7	55 32.4	55 1
5	344 32 47.0	N. 0° 10'	9.9967437	14 57.9	14 53.8	54 55.0	54 1
6	345 32 47.9	0 22	9.9968609	14 50.3	14 47.4	54 27.2	54 1
7	346 32 47.1	0 35	9.9969788	14 45.2	14 43.6	54 8.4	54 1
8	347 32 44.6	0 48	9.9970972	14 42.4	14 41.8	53 58.2	53 5
9	348 32 40.4	0 61	9.9972160	14 41.6	14 41.9	53 55.3	53 3
10	349 32 34.4	0 73	9.9973351	14 42.5	14 43.6	53 58.7	54 1
11	350 32 26.6	0 84	9.9974542	14 45.1	14 46.8	54 7.9	54 1
12	351 32 16.8	0 93	9.9975734	14 48.9	14 51.2	54 21.9	54 3
13	352 32 4.9	0 98	9.9976926	14 53.8	14 56.8	54 40.1	54 3
14	353 31 51.0	1 01	9.9978120	15 0.0	15 3.5	55 2.8	55 1
15	354 31 35.0	1 01	9.9979315	15 7.3	15 11.4	55 29.6	55 4
16	355 31 16.6	0 97	9.9980510	15 15.8	15 20.5	56 0.6	56 1
17	356 30 56.1	0 91	9.9981707	15 25.4	15 30.7	56 36.1	56 3
18	357 30 33.3	0 82	9.9982906	15 36.3	15 42.1	57 15.9	57 3
19	358 30 8.2	0 70	9.9984110	15 48.0	15 54.0	57 58.8	58 3
20	359 29 40.7	0 58	9.9985317	16 0.1	16 6.1	58 43.4	59 1
21	0 29 11.0	0 45	9.9986529	16 11.9	16 17.3	59 26.6	59 4
22	1 28 38.9	0 32	9.9987747	16 22.3	16 26.6	60 4.7	60 3
23	2 28 4.6	0 19	9.9988973	16 30.1	16 32.8	60 33.5	60 4
24	3 27 28.0	N. 0° 07'	9.9990205	16 34.3	16 34.7	60 48.8	60 3
25	4 26 49.2	S. 0° 02'	9.9991445	16 34.1	16 32.2	60 47.9	60 4
26	5 26 8.4	0 09	9.9992693	16 29.2	16 25.2	60 30.2	60 1
27	6 25 25.5	0 14	9.9993949	16 20.2	16 14.3	59 56.9	59 3
28	7 24 40.6	0 16	9.9995212	16 7.7	16 0.7	59 11.3	58 4
29	8 23 53.7	0 15	9.9996481	15 53.3	15 45.7	58 18.3	57 3
30	9 23 4.9	0 10	9.9997754	15 38.1	15 30.7	57 22.7	56 3
31	10 22 14.3	S. 0° 03'	9.9999031	15 23.6	15 16.9	56 29.5	56 1
32	11 21 22.0	N. 0° 07'	0.0000311	15 10.6	15 5.0	55 41.8	55 1

MEAN TIME.

Day of the Month.	THE MOON'S														
	Longitude.						Latitude.						Age.	Meridian	
	Noon.			Midnight.			Noon.			Midnight.			Noon.	Passage.	
	°	'	"	°	'	"	°	'	"	°	'	"	d	h	m
1	219	31	2.2	226	19	18.6	S. 5	5	22.9	S. 4	56	34.6	19.0	16	21.2
2	233	0	18.5	239	34	18.2	4	43	51.3	4	27	35.6	20.0	17	15.3
3	246	1	41.5	252	22	57.0	4	8	10.0	3	45	57.3	21.0	18	9.4
4	258	38	37.9	264	49	20.6	3	21	20.5	2	54	41.1	22.0	19	2.5
5	270	55	42.4	276	58	21.6	2	26	20.0	1	56	37.7	23.0	19	53.5
6	282	57	56.3	288	55	3.9	1	25	53.9	S. 0	54	27.6	24.0	20	42.0
7	294	50	20.3	300	44	19.0	S. 0	22	37.4	N. 0	9	18.8	25.0	21	27.7
8	306	37	31.8	312	30	28.4	N. 0	41	2.7	1	12	16.1	26.0	22	11.0
9	318	23	35.1	324	17	15.5	1	42	41.5	2	12	1.1	27.0	22	52.5
10	330	11	50.4	336	7	38.4	2	39	57.3	3	6	12.1	28.0	23	32.9
11	342	4	54.7	348	3	53.1	3	30	29.1	2	52	32.0	29.0	6	
12	354	4	44.0	0	7	87.6	4	12	5.1	4	28	52.8	0.2	0	13.1
13	6	12	41.6	12	20	3.4	4	42	42.5	4	53	21.9	1.2	0	54.0
14	18	29	49.7	24	42	7.6	5	0	40.0	5	4	28.7	2.2	1	36.5
15	30	57	5.1	37	14	49.7	5	4	41.2	5	1	12.4	3.2	2	21.6
16	43	35	32.0	49	59	22.5	4	53	59.7	4	43	3.2	4.2	3	10.0
17	56	26	33.9	62	57	20.3	4	28	25.7	4	10	10.9	5.2	4	2.1
18	69	31	57.1	76	10	38.2	3	48	27.1	3	23	24.9	6.2	4	57.7
19	82	53	40.2	89	41	15.8	2	55	17.7	2	24	23.0	7.2	5	55.8
20	96	33	38.9	103	30	57.6	1	51	1.3	1	15	37.2	8.2	6	54.9
21	110	33	17.1	117	40	36.1	N. 0	38	39.8	N. 0	0	41.4	9.2	7	53.3
22	124	52	46.3	132	9	30.9	S. 0	37	41.9	S. 1	15	50.7	10.2	8	49.7
23	139	30	24.5	146	54	49.8	1	53	3.0	2	28	36.4	11.2	9	44.0
24	154	22	1.8	161	51	4.6	3	1	47.6	3	31	57.2	12.2	10	26.6
25	169	20	56.4	176	50	27.5	3	58	28.2	4	20	49.3	13.2	11	22.3
26	184	18	28.1	191	43	47.4	4	38	36.3	4	51	32.6	14.2	12	20.1
27	199	5	19.8	206	22	4.6	4	59	30.5	5	2	29.9	15.2	13	12.9
28	213	33	11.5	220	38	0.2	5	0	37.7	4	54	8.3	16.2	14	7.1
29	227	36	3.2	234	27	3.0	4	43	20.0	4	28	35.5	17.2	15	2.5
30	241	10	55.5	247	47	45.7	4	10	19.6	3	48	58.5	18.2	15	58.4
31	254	17	48.7	260	41	27.0	3	24	58.1	2	58	44.1	19.2	16	53.5
32				273	11	30.9	S. 2	30	41.8	S. 2	1	14.6	20.2	17	46.5

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10".	Hour.	Right Ascension.	Declination.
<i>TUESDAY 1.</i>				<i>THURSDAY 3.</i>		
	<i>h m s</i>	<i>° ' "</i>	<i>"</i>		<i>h m s</i>	<i>° ' "</i>
0	14 21 36.22	S. 19 29 40.0	105.48	0	16 13 22.94	S. 25 24 15.6
1	14 23 54.23	19 40 12.9	104.23	1	16 15 43.44	25 28 11.7
2	14 26 12.33	19 50 38.3	102.97	2	16 18 3.92	25 31 59.1
3	14 28 30.53	20 0 56.1	101.70	3	16 20 24.37	25 35 37.9
4	14 30 48.83	20 11 6.3	100.48	4	16 22 44.78	25 39 8.0
5	14 33 7.22	20 21 8.8	99.15	5	16 25 5.16	25 42 29.5
6	14 35 25.71	20 31 3.7	97.85	6	16 27 25.50	25 45 42.3
7	14 37 44.30	20 40 50.8	96.58	7	16 29 45.79	25 48 46.5
8	14 40 2.97	20 50 30.0	95.25	8	16 32 6.03	25 51 42.1
9	14 42 21.74	21 0 1.5	93.93	9	16 34 26.21	25 54 29.0
10	14 44 40.60	21 9 25.1	92.62	10	16 36 46.34	25 57 7.3
11	14 46 59.55	21 18 40.8	91.28	11	16 39 6.41	25 59 37.1
12	14 49 18.58	21 27 48.5	89.97	12	16 41 26.41	26 1 58.2
13	14 51 37.70	21 36 48.3	88.62	13	16 43 46.34	26 4 10.8
14	14 53 56.91	21 45 40.0	87.28	14	16 46 6.19	26 6 14.7
15	14 56 16.19	21 54 23.7	85.93	15	16 48 25.96	26 8 10.2
16	14 58 35.56	22 2 59.3	84.58	16	16 50 45.65	26 9 57.0
17	15 0 55.01	22 11 26.8	83.22	17	16 53 5.26	26 11 35.4
18	15 3 14.54	22 19 46.1	81.85	18	16 55 24.77	26 13 5.2
19	15 5 34.14	22 27 57.2	80.48	19	16 57 44.18	26 14 26.5
20	15 7 53.81	22 36 0.1	79.12	20	17 0 3.50	26 15 39.4
21	15 10 13.56	22 43 54.8	77.78	21	17 2 22.71	26 16 43.8
22	15 12 33.37	22 51 41.2	76.35	22	17 4 41.81	26 17 39.7
23	15 14 53.24	S. 22 59 19.3	74.98	23	17 7 0.80	S. 26 18 27.3
<i>WEDNESDAY 2.</i>				<i>FRIDAY 4.</i>		
0	15 17 13.18	S. 23 6 49.1	73.57	0	17 9 19.68	S. 26 19 6.3
1	15 19 33.18	23 14 10.5	72.18	1	17 11 38.43	26 19 37.0
2	15 21 53.24	23 21 23.6	70.77	2	17 13 57.06	26 19 59.4
3	15 24 13.35	23 28 28.2	69.37	3	17 16 15.56	26 20 13.4
4	15 26 33.52	23 35 24.4	67.98	4	17 18 33.93	26 20 19.0
5	15 28 53.74	23 42 12.2	66.55	5	17 20 52.16	26 20 16.4
6	15 31 14.00	23 48 51.5	65.13	6	17 23 10.25	26 20 5.6
7	15 33 34.30	23 55 22.3	63.73	7	17 25 28.19	26 19 46.4
8	15 35 54.65	24 1 44.7	62.30	8	17 27 45.98	26 19 19.1
9	15 38 15.03	24 7 58.5	60.88	9	17 30 3.62	26 18 43.6
10	15 40 35.45	24 14 3.8	59.43	10	17 32 21.11	26 17 59.9
11	15 42 55.90	24 20 0.5	58.03	11	17 34 38.43	26 17 8.1
12	15 45 16.38	24 25 48.7	56.60	12	17 36 55.60	26 16 8.1
13	15 47 36.88	24 31 28.3	55.18	13	17 39 12.59	26 15 0.1
14	15 49 57.41	24 36 59.4	53.73	14	17 41 29.42	26 13 44.0
15	15 52 17.95	24 42 21.8	52.30	15	17 43 46.06	26 12 20.0
16	15 54 38.50	24 47 35.6	50.88	16	17 46 2.53	26 10 47.9
17	15 56 59.06	24 52 40.9	49.42	17	17 48 18.82	26 9 8.0
18	15 59 19.63	24 57 37.4	48.00	18	17 50 34.92	26 7 20.1
19	16 1 40.20	25 2 25.4	46.55	19	17 52 50.84	26 5 24.3
20	16 4 0.77	25 7 4.7	45.12	20	17 55 6.56	26 3 20.6
21	16 6 21.33	25 11 35.4	43.68	21	17 57 22.09	26 1 9.2
22	16 8 41.88	25 15 57.5	42.23	22	17 59 37.42	25 58 50.0
23	16 11 2.42	25 20 10.9	40.78	23	18 1 52.55	25 56 2.0
24	16 13 22.94	S. 25 24 15.6		24	18 4 7.00	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Right Ascension.				Declination.				Diff. Dec. for 10 ^m .		Hour.	Right Ascension.				Declination.				Diff. Dec. for 10 ^m .		
SATURDAY 5.											MONDAY 7.										
<i>h</i>	<i>m</i>	<i>s</i>	<i>u</i>	<i>h</i>	<i>m</i>	<i>s</i>	<i>u</i>	<i>u</i>		<i>h</i>	<i>m</i>	<i>s</i>	<i>u</i>	<i>h</i>	<i>m</i>	<i>s</i>	<i>u</i>	<i>u</i>			
18	4	7	48	S. 25	53	48	4	27	05	0	19	47	23	64	S. 21	38	3	1	79	77	
18	6	22	40	25	51	6	1	28	22	1	19	49	26	44	21	25	4	5	80	55	
18	8	36	71	25	48	16	2	29	08	2	19	51	28	98	21	17	0	6	81	37	
18	10	51	01	25	45	18	7	29	25	3	19	53	31	26	21	8	51	2	82	45	
18	13	5	09	25	42	13	6	29	08	4	19	55	33	29	21	0	36	5	82	33	
18	15	18	95	25	39	1	1	28	23	5	19	57	35	05	20	52	16	5	84	20	
18	17	32	60	25	35	41	1	24	47	6	19	59	36	56	20	43	51	3	85	07	
18	19	46	02	25	32	13	7	25	02	7	20	1	37	82	20	35	20	9	85	03	
18	21	59	21	25	28	38	8	27	02	8	20	3	38	82	20	26	46	3	86	78	
18	24	12	18	25	24	56	7	28	25	9	20	5	39	57	20	18	4	6	87	60	
18	26	24	92	25	21	7	2	29	45	10	20	7	40	07	20	9	19	0	88	45	
18	28	37	42	25	17	10	5	40	48	11	20	9	40	32	20	0	28	3	89	27	
18	30	49	69	25	13	6	6	41	25	12	20	11	40	32	19	51	32	7	90	08	
18	33	1	73	25	8	55	5	42	03	13	20	13	40	07	19	42	32	2	90	00	
18	35	13	32	25	4	37	3	44	23	14	20	15	39	58	19	33	26	8	91	48	
18	37	25	08	25	0	12	0	45	40	15	20	17	38	84	19	24	16	7	92	48	
18	39	36	39	24	58	39	6	46	58	16	20	19	37	86	19	15	1	8	93	28	
18	41	47	46	24	51	0	3	47	72	17	20	21	36	68	19	5	42	1	94	08	
18	43	58	28	24	46	14	0	48	47	18	20	23	35	17	18	56	17	9	94	32	
18	46	8	36	24	41	20	8	49	02	19	20	25	33	46	18	46	49	0	95	57	
18	48	19	18	24	36	20	7	51	12	20	20	27	31	52	18	37	15	6	96	32	
18	50	29	26	24	31	18	9	52	28	21	20	29	29	34	18	27	37	7	97	07	
18	52	39	09	24	26	0	2	53	40	22	20	31	26	93	18	17	55	3	97	40	
18	54	48	66	S. 24	20	39	8	54	50	23	20	33	24	29	S. 16	8	8	5	98	53	
SUNDAY 6.											TUESDAY 8.										
18	56	57	97	S. 24	16	12	8	55	52	0	20	35	21	42	S. 17	58	17	3	99	25	
18	59	7	03	24	9	39	1	56	72	1	20	37	18	32	17	48	21	8	99	05	
19	1	15	84	24	3	58	8	57	00	2	20	39	15	06	17	38	22	1	100	57	
19	3	24	39	23	58	12	0	58	28	3	20	41	11	46	17	28	18	1	101	35	
19	5	32	68	23	52	18	7	59	36	4	20	43	7	69	17	18	19	0	102	05	
19	7	40	72	23	46	19	0	61	03	5	20	45	3	71	17	7	57	7	102	73	
19	9	48	49	23	40	12	8	62	08	6	20	46	59	50	16	57	41	3	103	40	
19	11	56	00	23	34	0	3	63	12	7	20	48	55	08	16	47	20	9	104	05	
19	14	3	26	23	27	41	6	64	18	8	20	50	50	45	16	36	56	6	104	73	
19	16	10	23	23	21	16	5	65	22	9	20	52	45	61	16	26	28	2	105	37	
19	18	16	98	23	14	45	2	66	23	10	20	54	40	56	16	15	56	0	106	00	
19	20	23	45	23	8	7	8	67	26	11	20	56	35	30	16	5	20	0	106	66	
19	22	29	65	23	1	24	3	68	27	12	20	58	29	83	15	54	40	1	107	37	
19	24	35	59	22	54	34	7	69	27	13	21	0	24	17	15	43	56	5	107	58	
19	26	41	27	22	47	39	1	70	25	14	21	2	18	30	15	33	9	2	108	50	
19	28	46	69	22	40	37	6	71	25	15	21	4	12	24	15	22	18	2	109	10	
19	30	51	85	22	33	30	1	72	22	16	21	6	5	99	15	11	23	6	109	70	
19	32	56	74	22	26	16	8	73	20	17	21	7	59	55	15	0	25	4	110	28	
19	35	1	37	22	18	57	6	74	15	18	21	9	52	91	14	49	23	7	110	87	
19	37	5	73	22	11	32	7	75	12	19	21	11	46	09	14	38	18	5	111	43	
19	39	9	84	22	4	2	0	76	08	20	21	13	39	08	14	27	9	9	112	00	
19	41	13	68	21	56	25	7	77	00	21	21	15	31	90	14	15	57	9	112	57	
19	43	17	26	21	48	43	7	77	02	22	21	17	24	53	14	4	42	5	113	10	
19	45	20	58	21	40	56	3	78	08	23	21	19	16	99	13	53	23	9	113	55	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Dist. Dec. for 10".	Hour.	Right Ascension.	Declination.	
WEDNESDAY 9.				FRIDAY 11.			
0	21 21 9.27	S. 13 42 2.0	114.48	0	22 48 33.09	S. 3 47 29.6	
1	21 23 1.38	13 30 36.9	114.72	1	22 50 20.60	3 34 23.2	
2	21 24 53.33	13 19 8.6	115.22	2	22 52 8.10	3 21 15.9	
3	21 26 45.11	13 7 37.3	115.75	3	22 53 53.58	3 8 7.3	
4	21 28 36.73	12 56 2.8	116.23	4	22 55 43.05	2 54 58.2	
5	21 30 28.19	12 44 25.4	116.75	5	22 57 30.52	2 41 48.0	
6	21 32 19.50	12 32 44.9	117.22	6	22 59 17.99	2 28 37.0	
7	21 34 10.65	12 21 1.6	117.72	7	23 1 5.46	2 15 25.1	
8	21 36 1.64	12 9 15.3	118.18	8	23 2 52.94	2 2 12.5	
9	21 37 52.49	11 57 26.2	118.65	9	23 4 40.42	1 48 59.2	
10	21 39 43.19	11 45 34.3	119.10	10	23 6 27.92	1 35 45.3	
11	21 41 33.75	11 33 39.7	119.57	11	23 8 15.44	1 22 30.7	
12	21 43 24.17	11 21 42.3	120.00	12	23 10 2.97	1 9 15.5	
13	21 45 14.45	11 9 42.3	120.45	13	23 11 50.53	0 55 59.8	
14	21 47 4.60	10 57 39.6	120.87	14	23 13 38.11	0 42 43.6	
15	21 48 54.62	10 45 34.4	121.28	15	23 15 25.72	0 29 27.0	
16	21 50 44.51	10 33 26.7	121.70	16	23 17 13.37	0 16 10.0	
17	21 52 34.28	10 21 16.5	122.12	17	23 19 1.05	S. 0 2 52.6	
18	21 54 23.93	10 9 3.8	122.50	18	23 20 48.78	N. 0 10 25.0	
19	21 56 13.46	9 56 48.8	122.90	19	23 22 36.55	0 23 42.8	
20	21 58 2.87	9 44 31.4	123.28	20	23 24 24.37	0 37 0.9	
21	21 59 52.17	9 32 11.7	123.67	21	23 26 12.24	0 50 19.1	
22	22 1 41.37	9 19 49.7	124.02	22	23 28 0.17	1 3 37.5	
23	22 3 30.46	S. 9 7 25.6	124.40	23	23 29 48.15	N. 1 16 55.9	
THURSDAY 10.				SATURDAY 12.			
0	22 5 19.45	S. 8 54 59.2	124.75	0	23 31 36.20	N. 1 30 14.3	
1	22 7 8.34	8 42 30.7	125.08	1	23 33 24.32	1 43 32.7	
2	22 8 57.14	8 30 0.2	125.43	2	23 35 12.50	1 56 50.9	
3	22 10 45.84	8 17 27.6	125.77	3	23 37 0.76	2 10 9.1	
4	22 12 34.46	8 4 53.0	126.08	4	23 38 49.10	2 23 27.1	
5	22 14 22.99	7 52 16.5	126.42	5	23 40 37.52	2 36 44.8	
6	22 16 11.43	7 39 38.0	126.72	6	23 42 26.02	2 50 2.3	
7	22 17 59.80	7 26 57.7	127.02	7	23 44 14.62	3 3 19.5	
8	22 19 48.09	7 14 15.6	127.32	8	23 46 3.30	3 16 36.2	
9	22 21 36.31	7 1 31.7	127.62	9	23 47 52.08	3 29 52.6	
10	22 23 24.46	6 48 46.0	127.88	10	23 49 40.96	3 43 8.5	
11	22 25 12.54	6 35 58.7	128.17	11	23 51 29.94	3 56 23.9	
12	22 27 0.56	6 23 9.7	128.43	12	23 53 19.03	4 9 38.8	
13	22 28 48.52	6 10 19.1	128.68	13	23 55 8.23	4 22 53.0	
14	22 30 36.42	5 57 27.0	128.95	14	23 56 57.54	4 36 6.6	
15	22 32 24.27	5 44 33.3	129.18	15	23 58 46.96	4 49 19.5	
16	22 34 12.07	5 31 38.2	129.42	16	0 0 36.50	5 2 31.7	
17	22 35 59.82	5 18 41.7	129.67	17	0 2 26.17	5 15 43.9	
18	22 37 47.53	5 5 43.7	129.88	18	0 4 15.97	5 28 53.4	
19	22 39 35.20	4 52 44.4	130.08	19	0 6 5.90	5 42 3.0	
20	22 41 22.84	4 39 43.9	130.30	20	0 7 55.97	5 55 11.6	
21	22 43 10.44	4 26 42.1	130.50	21	0 9 46.17	6 8 19.2	
22	22 44 58.01	4 13 39.1	130.70	22	0 11 36.51	6 21 25.7	
23	22 46 45.56	4 0 34.9	130.88	23	0 13 27.00	6 34 31.1	
24	22 48 33.00	S. 3 47 29.6		24	0 15 17.65	N. 6 47 35.3	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Right Ascension.	Declination.	Diff. Dec. for 10".	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10".
SUNDAY 13.				TUESDAY 15.		
h m s	° ' "	"		h m s	° ' "	"
0 15 17.65	N. 6 47 35.3	130.50	0	1 47 52.91	N. 16 34 5.0	109.67
0 17 8.45	7 0 38.3	130.30	1	1 49 55.08	16 45 3.0	108.98
0 18 59.40	7 13 40.1	130.08	2	1 51 57.56	16 55 56.9	108.30
0 20 50.51	7 26 40.5	129.83	3	1 54 0.35	17 6 46.7	107.58
0 22 41.78	7 39 39.3	129.60	4	1 56 3.46	17 17 32.2	106.88
0 24 33.23	7 52 37.1	129.35	5	1 58 6.89	17 28 13.3	106.13
0 26 24.84	8 5 33.2	129.10	6	2 0 10.63	17 38 50.1	105.40
0 28 16.63	8 18 27.8	128.83	7	2 2 14.70	17 49 22.5	104.63
0 30 8.60	8 31 20.8	128.57	8	2 4 19.10	17 59 50.3	103.88
0 32 0.75	8 44 12.2	128.27	9	2 6 23.82	18 10 13.6	103.10
0 33 53.09	8 57 1.8	127.98	10	2 8 28.88	18 20 32.2	102.32
0 35 45.61	9 9 49.7	127.68	11	2 10 34.26	18 30 46.1	101.52
0 37 38.33	9 22 35.8	127.37	12	2 12 39.97	18 40 55.2	100.72
0 39 31.24	9 35 20.0	127.05	13	2 14 46.02	18 50 59.5	99.88
0 41 24.36	9 48 2.3	126.72	14	2 16 52.42	19 0 58.8	99.07
0 43 17.67	10 0 42.6	126.38	15	2 18 59.15	19 10 53.2	98.20
0 45 11.20	10 13 20.9	126.03	16	2 21 6.22	19 20 42.4	97.37
0 47 4.93	10 25 57.1	125.68	17	2 23 13.64	19 30 26.6	96.48
0 48 58.87	10 38 31.2	125.30	18	2 25 21.40	19 40 5.5	95.62
0 50 53.03	10 51 3.0	124.93	19	2 27 29.50	19 49 39.2	94.72
0 52 47.42	11 3 32.6	124.55	20	2 29 37.95	19 59 7.5	93.83
0 54 42.02	11 15 59.9	124.15	21	2 31 46.75	20 6 30.5	92.90
0 56 36.86	11 28 24.8	123.75	22	2 33 55.90	20 17 47.9	91.98
0 58 31.92	N. 11 40 47.3	123.33	23	2 36 5.40	N. 20 26 59.8	91.08
MONDAY 14.				WEDNESDAY 16.		
h m s	° ' "	"		h m s	° ' "	"
1 0 27.22	N. 11 53 7.3	122.92	0	2 38 13.24	N. 20 36 6.0	90.08
1 2 22.76	12 5 24.8	122.47	1	2 40 25.44	20 45 6.5	89.18
1 4 18.53	12 17 39.6	122.03	2	2 42 35.99	20 54 1.3	88.15
1 6 14.55	12 29 51.8	121.58	3	2 44 46.89	21 2 50.2	87.18
1 8 10.82	12 42 1.3	121.10	4	2 46 58.15	21 11 33.3	86.17
1 10 7.33	12 54 7.9	120.65	5	2 49 9.76	21 20 10.3	85.17
1 12 4.10	13 6 11.8	120.15	6	2 51 21.73	21 28 41.3	84.18
1 14 1.13	13 18 12.7	119.67	7	2 53 34.05	21 37 6.1	83.12
1 15 58.42	13 30 10.7	119.17	8	2 55 46.72	21 45 24.8	82.07
1 17 55.97	13 42 5.7	118.68	9	2 57 59.75	21 53 37.2	81.02
1 19 53.79	13 53 57.5	118.13	10	3 0 13.14	22 1 43.3	79.98
1 21 51.88	14 5 46.3	117.58	11	3 2 26.88	22 9 42.9	78.87
1 23 50.24	14 17 31.8	117.05	12	3 4 40.98	22 17 36.1	77.78
1 25 48.88	14 29 14.1	116.48	13	3 6 55.43	22 25 22.8	76.67
1 27 47.79	14 40 53.0	115.92	14	3 9 10.24	22 33 2.8	75.55
1 29 46.99	14 52 28.5	115.35	15	3 11 25.41	22 40 36.1	74.43
1 31 46.47	15 4 0.6	114.77	16	3 13 40.92	22 48 2.7	73.28
1 33 46.24	15 15 29.2	114.15	17	3 15 56.79	22 55 22.4	72.15
1 35 46.30	15 26 54.1	113.57	18	3 18 13.01	23 2 35.3	70.97
1 37 46.65	15 38 15.5	112.93	19	3 20 29.58	23 9 41.1	69.80
1 39 47.30	15 49 33.1	112.30	20	3 22 46.51	23 16 39.9	68.62
1 41 48.25	16 0 46.9	111.65	21	3 25 3.78	23 23 31.6	67.42
1 43 49.50	16 11 56.8	111.02	22	3 27 31.40	23 30 16.1	66.20
1 45 51.05	" 23 2.9	110.35	23	3 29 39.36	23 36 53.3	64.98
1 47 52.01	N. 14 5.0		24	3 31 57.67	N. 23 42 22.0	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	
THURSDAY 17.				SATURDAY 19.			
0	3 31 57.67	N. 23 43 23.2	62.70	0	5 28 20.91	N. 26 11 15.5	
1	3 34 16.32	23 49 45.7	62.50	1	5 30 51.69	26 10 34.0	
2	3 36 35.32	23 56 0.7	61.25	2	5 33 22.58	26 9 49.7	
3	3 38 54.65	24 2 8.2	59.32	3	5 35 53.39	26 8 41.4	
4	3 41 14.32	24 8 8.1	58.70	4	5 38 24.71	26 7 30.2	
5	3 43 34.33	24 14 0.3	57.40	5	5 40 55.93	26 6 9.1	
6	3 45 54.67	24 19 44.7	56.13	6	5 43 27.25	26 4 38.9	
7	3 48 15.34	24 25 21.4	54.80	7	5 45 58.65	26 2 57.9	
8	3 50 36.34	24 30 50.2	53.47	8	5 48 30.14	26 1 6.9	
9	3 52 57.66	24 36 11.0	52.13	9	5 51 1.70	25 59 5.9	
10	3 55 19.21	24 41 23.8	50.80	10	5 53 33.23	25 56 54.0	
11	3 57 41.27	24 46 28.6	49.45	11	5 56 5.03	25 54 32.9	
12	4 0 3.55	24 51 25.3	48.00	12	5 58 36.78	25 52 1.9	
13	4 2 26.15	24 56 13.8	46.70	13	6 1 8.57	25 49 20.8	
14	4 4 49.06	25 0 24.9	45.33	14	6 3 40.40	25 46 29.7	
15	4 7 12.27	25 5 25.9	43.98	15	6 6 12.26	25 43 28.6	
16	4 9 35.79	25 9 49.4	42.53	16	6 8 44.14	25 40 17.4	
17	4 11 59.61	25 14 4.5	41.10	17	6 11 16.05	25 36 56.2	
18	4 14 23.72	25 18 11.2	39.67	18	6 13 47.97	25 33 25.0	
19	4 16 48.13	25 22 9.1	38.20	19	6 16 19.89	25 29 43.7	
20	4 19 12.22	25 25 58.6	36.70	20	6 18 51.82	25 25 52.5	
21	4 21 37.79	25 29 39.2	35.33	21	6 21 23.74	25 21 51.2	
22	4 24 3.04	25 33 11.3	33.87	22	6 23 55.64	25 17 39.9	
23	4 26 28.47	N. 25 36 34.5	32.40	23	6 26 27.52	N. 25 13 18.6	
FRIDAY 18.				SUNDAY 20.			
0	4 28 54.36	N. 25 39 48.9	30.90	0	6 28 59.38	N. 25 8 47.4	
1	4 31 20.42	25 42 54.4	29.42	1	6 31 31.20	25 4 6.2	
2	4 33 46.74	25 45 50.9	27.92	2	6 34 2.99	24 59 15.0	
3	4 36 13.32	25 48 38.4	26.42	3	6 36 34.74	24 54 14.0	
4	4 38 40.14	25 51 16.9	24.80	4	6 39 6.43	24 49 3.0	
5	4 41 7.21	25 53 46.9	23.27	5	6 41 38.06	24 43 42.1	
6	4 43 34.32	25 56 6.4	21.80	6	6 44 9.64	24 38 11.4	
7	4 46 2.07	25 58 17.4	20.30	7	6 46 41.14	24 32 30.8	
8	4 48 29.85	26 0 19.2	18.78	8	6 49 12.57	24 26 40.4	
9	4 50 57.25	26 2 11.6	17.29	9	6 51 43.92	24 20 40.2	
10	4 53 26.07	26 3 54.8	15.68	10	6 54 15.19	24 14 30.3	
11	4 55 54.51	26 5 28.5	14.06	11	6 56 46.37	24 8 10.7	
12	4 58 23.15	26 6 52.8	12.47	12	6 59 17.45	24 1 41.3	
13	5 0 32.00	26 8 7.6	10.90	13	7 1 48.43	23 55 2.3	
14	5 3 21.05	26 9 13.0	9.28	14	7 4 19.31	23 48 13.7	
15	5 5 50.28	26 10 8.7	7.70	15	7 6 50.07	23 41 15.3	
16	5 8 19.70	26 10 54.9	6.10	16	7 9 20.72	23 34 7.7	
17	5 10 49.29	26 11 31.5	4.48	17	7 11 51.24	23 26 30.5	
18	5 13 19.06	26 11 58.4	2.87	18	7 14 21.64	23 19 23.8	
19	5 15 48.99	26 12 15.6	1.27	19	7 16 51.91	23 11 11.1	
20	5 18 19.08	26 12 23.2	0.38	20	7 19 22.05	23	
21	5 20 49.33	26 12 20.9	2.00	21	7 21 52.05	22	
22	5 23 19.72	26 12 8.9	3.62	22	7 24 2.00	21	
23	5 25 50.25	26 11 47.1	5.27	23	7 26	20	
24	5 28 20.91	N. 26 11 15.5		24	7 29	19	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Right Ascension.	Declination.	Dist. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Dist. Dec. for 10 ^m .
MONDAY 21.				WEDNESDAY 23.		
7 29 21 17	N. 22 31 27 4	85 77	0	9 25 17 39	N. 13 11 33 7	144 08
7 31 50 57	22 29 55 8	86 78	1	9 27 37 40	12 57 9 5	144 08
7 34 19 31	22 14 15 1	88 78	2	9 29 57 23	12 49 40 2	145 78
7 36 48 09	22 5 23 4	89 78	3	9 32 16 88	12 28 5 3	146 87
7 39 17 81	21 56 26 7	91 75	4	9 34 36 34	12 13 26 4	147 87
7 41 46 55	21 47 19 2	92 73	5	9 36 55 69	11 59 42 2	148 13
7 44 15 12	21 38 2 8	94 70	6	9 39 14 73	11 43 53 3	148 38
7 46 43 32	21 28 37 6	95 65	7	9 41 33 66	11 28 59 7	149 70
7 49 11 74	21 19 3 7	97 10	8	9 43 52 41	11 14 1 3	150 08
7 51 39 78	21 9 21 1	98 32	9	9 46 11 00	10 58 58 9	151 15
7 54 7 64	20 59 30 0	99 56	10	9 48 29 48	10 43 52 0	151 87
7 56 35 31	20 49 30 3	101 35	11	9 50 47 67	10 29 40 8	152 35
7 59 2 79	20 39 22 2	102 75	12	9 53 5 77	10 13 25 3	153 38
8 1 30 08	20 29 5 7	104 15	13	9 55 23 71	9 58 6 2	154 87
8 3 57 18	20 18 40 8	105 59	14	9 57 41 49	9 42 43 0	154 88
8 6 24 08	20 8 7 7	106 57	15	9 59 59 19	9 27 16 0	155 12
8 8 50 79	19 57 26 3	108 30	16	10 2 16 60	9 11 45 3	155 72
8 11 17 30	19 46 37 1	109 37	17	10 4 33 93	8 56 11 0	156 20
8 13 43 60	19 35 39 7	110 38	18	10 6 51 12	8 40 33 2	156 38
8 16 9 71	19 24 34 4	112 23	19	10 9 8 17	8 24 52 1	157 40
8 18 35 62	19 13 21 1	113 60	20	10 11 25 08	8 9 7 7	157 38
8 21 1 32	19 2 0 1	114 79	21	10 13 41 85	7 53 20 1	158 48
8 23 26 81	18 50 31 4	116 07	22	10 15 58 50	7 37 29 5	158 38
8 25 52 10	N. 18 38 55 0	117 38	23	10 18 15 01	N. 7 21 33 9	159 08
TUESDAY 22.				THURSDAY 24.		
8 28 17 19	N. 18 27 11 0	118 57	0	10 20 31 40	N. 7 5 39 5	159 35
8 30 42 06	18 15 19 6	119 32	1	10 22 47 67	6 49 40 4	160 38
8 33 6 73	18 3 20 7	121 02	2	10 25 3 39	6 33 38 7	160 72
8 35 31 19	17 51 14 6	122 33	3	10 27 19 85	6 17 34 4	161 10
8 37 55 45	17 39 1 2	123 42	4	10 29 35 78	6 1 27 3	161 47
8 40 19 49	17 26 40 7	124 58	5	10 31 51 60	5 45 19 0	161 35
8 42 43 32	17 14 13 2	125 77	6	10 34 7 31	5 29 7 9	162 18
8 45 6 35	17 1 38 6	126 90	7	10 36 22 93	5 12 54 3	162 30
8 47 30 37	16 48 57 2	128 03	8	10 38 38 45	4 56 39 3	162 38
8 49 53 58	16 36 9 0	129 15	9	10 40 53 37	4 40 22 9	162 10
8 52 16 39	16 23 14 1	130 36	10	10 43 9 21	4 24 4 3	162 37
8 54 39 38	16 10 12 6	131 35	11	10 45 24 47	4 7 44 1	163 68
8 57 1 37	15 57 4 5	132 42	12	10 47 39 64	3 51 22 4	163 35
8 59 24 36	15 43 50 0	133 47	13	10 49 54 74	3 34 59 3	164 35
9 1 46 54	15 30 29 2	134 50	14	10 52 9 76	3 18 35 0	164 35
9 4 8 52	15 17 2 2	135 53	15	10 54 24 72	3 2 9 5	164 43
9 6 30 30	15 3 29 0	136 55	16	10 56 39 61	2 45 42 9	164 37
9 8 51 38	14 49 49 7	137 53	17	10 58 54 44	2 29 15 5	164 72
9 11 13 25	14 36 4 5	138 50	18	11 1 9 21	2 12 47 2	164 38
9 13 34 43	14 22 13 5	139 47	19	11 3 23 92	1 56 18 2	164 33
9 15 45 41	14 8 16 7	140 42	20	11 5 38 59	1 39 48 6	164 08
	13 54 14 2	141 35	21	11 7 53 21	1 23 18 5	165 07
	13 40 6 1	142 35	22	11 10 7 78	1 6 48 1	165 12
	13 25 32 6	143 19	23	11 12 22 32	0 50 17 4	165 18

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
FRIDAY 25.				SUNDAY 27.			
0	11 14 36 ^{h m s} .82	N. 0 33 46 ^{o ' ' "} .6	165 ^{''} .13	0	13 2 42 ^{h m s} .51	S. 12 5 40 ^{o ' ' "} .7	164 ^{''} .10
1	11 16 51 ^{h m s} .28	0 17 15 ^{o ' ' "} .8	165 ^{''} .13	1	13 4 59 ^{h m s} .55	12 20 5 ^{o ' ' "} .4	163 ^{''} .10
2	11 19 5 ^{h m s} .72	N. 0 0 45 ^{o ' ' "} .0	165 ^{''} .08	2	13 7 16 ^{h m s} .72	12 34 24 ^{o ' ' "} .9	162 ^{''} .03
3	11 21 20 ^{h m s} .14	S. 0 15 45 ^{o ' ' "} .5	165 ^{''} .03	3	13 9 34 ^{h m s} .01	12 48 39 ^{o ' ' "} .2	161 ^{''} .96
4	11 23 34 ^{h m s} .53	0 32 15 ^{o ' ' "} .7	164 ^{''} .97	4	13 11 51 ^{h m s} .42	13 2 48 ^{o ' ' "} .2	160 ^{''} .90
5	11 25 48 ^{h m s} .91	0 48 45 ^{o ' ' "} .5	164 ^{''} .88	5	13 14 8 ^{h m s} .96	13 16 51 ^{o ' ' "} .8	159 ^{''} .83
6	11 28 3 ^{h m s} .28	1 5 14 ^{o ' ' "} .8	164 ^{''} .78	6	13 16 26 ^{h m s} .63	13 30 50 ^{o ' ' "} .0	158 ^{''} .76
7	11 30 17 ^{h m s} .64	1 21 43 ^{o ' ' "} .5	164 ^{''} .65	7	13 18 44 ^{h m s} .42	13 44 42 ^{o ' ' "} .6	157 ^{''} .69
8	11 32 31 ^{h m s} .99	1 39 11 ^{o ' ' "} .4	164 ^{''} .50	8	13 21 2 ^{h m s} .35	13 58 29 ^{o ' ' "} .5	156 ^{''} .62
9	11 34 46 ^{h m s} .34	1 54 38 ^{o ' ' "} .4	164 ^{''} .33	9	13 23 20 ^{h m s} .41	14 12 10 ^{o ' ' "} .7	155 ^{''} .55
10	11 37 0 ^{h m s} .70	2 11 4 ^{o ' ' "} .4	164 ^{''} .18	10	13 25 38 ^{h m s} .60	14 25 46 ^{o ' ' "} .0	154 ^{''} .48
11	11 39 15 ^{h m s} .06	2 27 29 ^{o ' ' "} .3	163 ^{''} .97	11	13 27 56 ^{h m s} .93	14 39 15 ^{o ' ' "} .4	153 ^{''} .41
12	11 41 29 ^{h m s} .43	2 43 53 ^{o ' ' "} .1	163 ^{''} .75	12	13 30 15 ^{h m s} .39	14 52 38 ^{o ' ' "} .8	152 ^{''} .34
13	11 43 43 ^{h m s} .82	3 0 15 ^{o ' ' "} .6	163 ^{''} .50	13	13 32 33 ^{h m s} .99	15 5 56 ^{o ' ' "} .1	151 ^{''} .27
14	11 45 58 ^{h m s} .22	3 16 36 ^{o ' ' "} .6	163 ^{''} .25	14	13 34 52 ^{h m s} .72	15 19 7 ^{o ' ' "} .3	150 ^{''} .20
15	11 48 12 ^{h m s} .65	3 32 56 ^{o ' ' "} .1	162 ^{''} .98	15	13 37 11 ^{h m s} .59	15 32 12 ^{o ' ' "} .1	149 ^{''} .13
16	11 50 27 ^{h m s} .10	3 49 14 ^{o ' ' "} .0	162 ^{''} .68	16	13 39 30 ^{h m s} .60	15 45 10 ^{o ' ' "} .7	148 ^{''} .06
17	11 52 41 ^{h m s} .59	4 5 30 ^{o ' ' "} .1	162 ^{''} .37	17	13 41 49 ^{h m s} .75	15 58 2 ^{o ' ' "} .8	147 ^{''} .99
18	11 54 56 ^{h m s} .10	4 21 44 ^{o ' ' "} .3	162 ^{''} .05	18	13 44 9 ^{h m s} .04	16 10 48 ^{o ' ' "} .5	146 ^{''} .92
19	11 57 10 ^{h m s} .65	4 37 56 ^{o ' ' "} .6	161 ^{''} .70	19	13 46 28 ^{h m s} .46	16 23 27 ^{o ' ' "} .6	145 ^{''} .85
20	11 59 25 ^{h m s} .24	4 54 6 ^{o ' ' "} .8	161 ^{''} .33	20	13 48 48 ^{h m s} .03	16 36 0 ^{o ' ' "} .0	144 ^{''} .78
21	12 1 39 ^{h m s} .87	5 10 14 ^{o ' ' "} .8	160 ^{''} .97	21	13 51 7 ^{h m s} .73	16 48 25 ^{o ' ' "} .7	143 ^{''} .71
22	12 3 54 ^{h m s} .54	5 26 20 ^{o ' ' "} .6	160 ^{''} .55	22	13 53 27 ^{h m s} .57	17 0 44 ^{o ' ' "} .6	142 ^{''} .64
23	12 6 9 ^{h m s} .27	S. 5 42 23 ^{o ' ' "} .9	160 ^{''} .13	23	13 55 47 ^{h m s} .55	S. 17 12 56 ^{o ' ' "} .6	141 ^{''} .57
SATURDAY 26.				MONDAY 28.			
0	12 8 24 ^{h m s} .05	S. 5 58 24 ^{o ' ' "} .7	159 ^{''} .70	0	13 58 7 ^{h m s} .67	S. 17 25 1 ^{o ' ' "} .7	139 ^{''} .50
1	12 10 38 ^{h m s} .88	6 14 22 ^{o ' ' "} .9	159 ^{''} .33	1	14 0 27 ^{h m s} .93	17 36 59 ^{o ' ' "} .8	138 ^{''} .43
2	12 12 53 ^{h m s} .78	6 30 18 ^{o ' ' "} .3	158 ^{''} .77	2	14 2 48 ^{h m s} .32	17 48 50 ^{o ' ' "} .8	137 ^{''} .36
3	12 15 8 ^{h m s} .74	6 46 10 ^{o ' ' "} .9	158 ^{''} .28	3	14 5 8 ^{h m s} .85	18 0 34 ^{o ' ' "} .6	136 ^{''} .29
4	12 17 23 ^{h m s} .76	7 2 0 ^{o ' ' "} .6	157 ^{''} .78	4	14 7 29 ^{h m s} .52	18 12 11 ^{o ' ' "} .2	135 ^{''} .22
5	12 19 38 ^{h m s} .85	7 17 47 ^{o ' ' "} .3	157 ^{''} .25	5	14 9 50 ^{h m s} .33	18 23 40 ^{o ' ' "} .5	134 ^{''} .15
6	12 21 54 ^{h m s} .02	7 33 30 ^{o ' ' "} .8	156 ^{''} .70	6	14 12 11 ^{h m s} .27	18 35 2 ^{o ' ' "} .4	133 ^{''} .08
7	12 24 9 ^{h m s} .26	7 49 11 ^{o ' ' "} .0	156 ^{''} .15	7	14 14 32 ^{h m s} .34	18 46 16 ^{o ' ' "} .9	131 ^{''} .01
8	12 26 24 ^{h m s} .57	8 4 47 ^{o ' ' "} .9	155 ^{''} .58	8	14 16 53 ^{h m s} .55	18 57 23 ^{o ' ' "} .9	129 ^{''} .94
9	12 28 39 ^{h m s} .97	8 20 21 ^{o ' ' "} .4	154 ^{''} .98	9	14 19 14 ^{h m s} .89	19 8 23 ^{o ' ' "} .4	128 ^{''} .87
10	12 30 55 ^{h m s} .45	8 35 51 ^{o ' ' "} .3	154 ^{''} .37	10	14 21 36 ^{h m s} .35	19 19 15 ^{o ' ' "} .2	127 ^{''} .80
11	12 33 11 ^{h m s} .02	8 51 17 ^{o ' ' "} .5	153 ^{''} .75	11	14 23 57 ^{h m s} .95	19 29 59 ^{o ' ' "} .4	126 ^{''} .73
12	12 35 26 ^{h m s} .68	9 6 40 ^{o ' ' "} .0	153 ^{''} .10	12	14 26 19 ^{h m s} .68	19 40 35 ^{o ' ' "} .8	124 ^{''} .66
13	12 37 42 ^{h m s} .43	9 21 58 ^{o ' ' "} .6	152 ^{''} .45	13	14 28 41 ^{h m s} .54	19 51 4 ^{o ' ' "} .4	123 ^{''} .59
14	12 39 58 ^{h m s} .28	9 37 13 ^{o ' ' "} .3	151 ^{''} .78	14	14 31 3 ^{h m s} .52	20 1 25 ^{o ' ' "} .2	122 ^{''} .52
15	12 42 14 ^{h m s} .22	9 52 24 ^{o ' ' "} .0	151 ^{''} .07	15	14 33 25 ^{h m s} .62	20 11 38 ^{o ' ' "} .1	121 ^{''} .45
16	12 44 30 ^{h m s} .27	10 7 30 ^{o ' ' "} .4	150 ^{''} .37	16	14 35 47 ^{h m s} .85	20 21 42 ^{o ' ' "} .9	119 ^{''} .38
17	12 46 46 ^{h m s} .42	10 22 32 ^{o ' ' "} .6	149 ^{''} .65	17	14 38 10 ^{h m s} .19	20 31 39 ^{o ' ' "} .8	118 ^{''} .31
18	12 49 2 ^{h m s} .67	10 37 30 ^{o ' ' "} .5	148 ^{''} .90	18	14 40 32 ^{h m s} .65	20 41 28 ^{o ' ' "} .6	117 ^{''} .24
19	12 51 19 ^{h m s} .03	10 52 23 ^{o ' ' "} .9	148 ^{''} .13	19		20 51 9 ^{o ' ' "} .2	116 ^{''} .17
20	12 53 35 ^{h m s} .50	11 7 12 ^{o ' ' "} .7	147 ^{''} .37	20		0 41 ^{o ' ' "} .7	115 ^{''} .10
21	12 55 52 ^{h m s} .08	11 21 56 ^{o ' ' "} .9	146 ^{''} .88	21		10 6 ^{o ' ' "} .0	114 ^{''} .03
22	12 58 8 ^{h m s} .77	11 36 36 ^{o ' ' "} .4	145 ^{''} .77	22		20 9 ^{o ' ' "} .9	113 ^{''} .96
23	13 0 25 ^{h m s} .58	11 51 11 ^{o ' ' "} .0	144 ^{''} .95	23		30 9 ^{o ' ' "} .8	112 ^{''} .89
24	13 2 42 ^{h m s} .51	S. 12 5 40 ^{o ' ' "} .7		24		40 9 ^{o ' ' "} .7	111 ^{''} .82

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Right Ascension.	Declination.	Dif. Dec. for 10".	Hour.	Right Ascension.	Declination.	Dif. Dec. for 10".
TUESDAY 29.				THURSDAY 31.		
^h ^m ^s	^o ⁱ ⁿ	ⁿ		^h ^m ^s	^o ⁱ ⁿ	ⁿ
14 54 49.74	S. 21 37 28.8	88.48	0	16 50 4.24	S. 25 55 42.4	16.97
14 57 12.95	21 46 19.7	87.07	1	16 52 27.37	25 57 24.2	15.47
14 59 36.25	21 55 2.1	85.65	2	16 54 50.38	25 58 57.0	14.00
15 1 59.65	22 3 36.0	84.22	3	16 57 13.26	26 0 21.0	12.50
15 4 23.13	22 12 1.3	82.80	4	16 59 36.01	26 1 36.0	11.08
15 6 46.70	22 20 18.1	81.37	5	17 1 58.63	26 2 42.2	9.57
15 9 10.36	22 28 26.3	79.93	6	17 4 21.10	26 3 39.6	8.10
15 11 34.09	22 36 25.9	78.47	7	17 6 43.43	26 4 28.2	6.68
15 13 57.91	22 44 16.7	77.08	8	17 9 5.61	26 5 7.9	5.18
15 16 21.79	22 51 58.9	75.57	9	17 11 27.63	26 5 39.6	3.72
15 18 45.75	22 59 32.3	74.10	10	17 13 49.50	26 6 1.3	2.27
15 21 9.77	23 6 56.9	72.63	11	17 16 11.20	26 6 14.9	0.82
15 23 33.85	23 14 12.7	71.17	12	17 18 32.73	26 6 19.8	0.62
15 25 57.99	23 21 19.7	69.68	13	17 20 54.09	26 6 16.1	2.06
15 28 22.19	23 28 17.8	68.20	14	17 23 15.27	26 6 3.8	3.47
15 30 46.43	23 35 7.0	66.73	15	17 25 36.27	26 5 43.0	4.90
15 33 10.73	23 41 47.4	65.23	16	17 27 57.08	26 5 13.6	6.32
15 35 35.06	23 48 18.8	63.73	17	17 30 17.70	26 4 35.7	7.72
15 37 59.43	23 54 41.2	62.25	18	17 32 38.13	26 3 49.3	9.12
15 40 23.83	24 0 54.7	60.75	19	17 34 58.35	26 2 54.6	10.52
15 42 48.26	24 6 59.2	59.25	20	17 37 18.37	26 1 51.4	11.92
15 45 12.72	24 12 54.7	57.73	21	17 39 38.19	26 0 39.9	13.30
15 47 37.19	24 18 41.1	56.23	22	17 41 57.79	25 59 20.1	14.68
15 50 1.68	S. 24 24 18.5	54.73	23	17 44 17.17	S. 25 57 52.0	16.06
WEDNESDAY 30.				FRIDAY, APRIL 1.		
^h ^m ^s	^o ⁱ ⁿ	ⁿ	0	17 46 36.34	S. 25 56 15.7	
15 52 26.17	S. 24 29 46.9	53.22				
15 54 50.67	24 35 6.2	51.72				
15 57 15.17	24 40 16.5	50.18				
15 59 39.67	24 45 17.6	48.68				
16 2 4.16	24 50 9.7	47.17				
16 4 28.63	24 54 52.7	45.63				
16 6 53.09	24 59 26.5	44.13				
16 9 17.52	25 3 51.3	42.62				
16 11 41.92	25 8 7.0	41.10				
16 14 6.29	25 12 13.6	39.57				
16 16 30.61	25 16 11.0	38.05				
16 18 54.90	25 19 59.3	36.52				
16 21 19.13	25 23 38.6	35.02				
16 23 43.31	25 27 8.7	33.52				
16 26 7.43	25 30 29.8	32.00				
16 28 31.49	25 33 41.8	30.47				
16 30 55.47	25 36 44.6	28.98				
16 33 19.39	25 39 38.5	27.45				
16 35 43.22	25 42 23.2	25.97				
16 38 6.96	25 44 59.0	24.45				
16 40 30.62	25 47 25.7	22.92				
16 42 54.18	25 49 43.3	21.42				
16 45 17.64	25 51 52.0	19.95				
16 47 41.10	25 53 51.7	18.45				
16 50 4.56	S. 25 55 42.4					

PHASES OF THE MOON.

- ☾ Last Quarter - 3 13 23.3
 ● New Moon - 11 18 28.8
 ☽ First Quarter - 19 10 41.6
 ○ Full Moon - 26 1 56.8

- ☾ Apogee - 8 23
 ☾ Perigee - 24 11

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Noon.			P. L. of diff.			III ^b .			P. L. of diff.			VI ^b .			P. L. of diff.			IX ^b .		
			°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"
1	Regulus	W.	71	59	22	2457	73	41	36	2476	75	23	23	2495	77	4	43	2514	77	4	43	2514	
	Spica π	W.	18	5	28	2512	19	46	25	2522	21	27	8	2534	23	7	34	2546	23	7	34	2546	
	Antares	E.	27	57	0	2452	26	14	39	2471	24	32	45	2490	22	51	15	2502	22	51	15	2502	
	Saturn	E.	62	51	16	2480	61	9	35	2499	59	28	20	2518	57	47	32	2529	57	47	32	2529	
	Jupiter	E.	66	20	47	2509	64	39	46	2528	62	59	12	2547	61	19	4	2558	61	19	4	2558	
	α Aquilæ	E.	83	51	37	3048	82	22	24	3072	80	53	40	3097	79	25	27	3116	79	25	27	3116	
SUN	E.	120	53	16	2792	119	18	38	2811	117	44	25	2832	116	10	39	2853	116	10	39	2853		
2	Regulus	W.	85	24	50	2607	87	3	35	2626	88	41	55	2643	90	19	51	2660	90	19	51	2660	
	Spica π	W.	31	24	49	2624	33	3	11	2640	34	41	12	2657	36	18	50	2674	36	18	50	2674	
	Saturn	E.	49	30	11	2632	47	52	0	2651	46	14	14	2669	44	36	53	2686	44	36	53	2686	
	Jupiter	E.	53	5	0	2661	51	27	28	2679	49	50	20	2698	48	13	37	2716	48	13	37	2716	
	α Aquilæ	E.	72	12	27	3265	70	47	35	3298	69	23	21	3330	67	59	44	3363	67	59	44	3363	
	SUN	E.	108	28	21	2953	106	57	9	2973	105	26	23	2992	103	56	0	3011	103	56	0	3011	
3	Regulus	W.	98	23	39	2746	99	59	18	2763	101	34	35	2778	103	9	32	2793	103	9	32	2793	
	Spica π	W.	44	21	34	2753	45	57	4	2769	47	32	13	2784	49	7	2	2799	49	7	2	2799	
	Saturn	E.	36	36	4	2775	35	1	3	2792	33	26	24	2808	31	52	7	2823	31	52	7	2823	
	Jupiter	E.	40	15	54	2802	38	41	29	2818	37	7	24	2835	35	33	41	2850	35	33	41	2850	
	α Aquilæ	E.	61	11	49	3554	59	52	24	3597	58	33	46	3642	57	15	57	3687	57	15	57	3687	
	SUN	E.	96	29	58	3103	95	1	52	3121	93	34	8	3138	92	6	44	3155	92	6	44	3155	
4	Spica π	W.	56	56	27	2868	58	29	27	2880	60	2	11	2893	61	34	39	2906	61	34	39	2906	
	Saturn	E.	24	5	52	2903	22	33	37	2920	21	1	43	2935	19	30	8	2950	19	30	8	2950	
	Jupiter	E.	27	49	59	2924	26	18	10	2937	24	46	38	2950	23	15	23	2963	23	15	23	2963	
	SUN	E.	84	54	38	3233	83	29	8	3247	82	3	54	3261	80	38	57	3275	80	38	57	3275	
5	Spica π	W.	69	13	16	2960	70	44	19	2970	72	15	9	2978	73	45	49	2986	73	45	49	2986	
	Antares	W.	23	24	52	2954	24	56	3	2963	26	27	2	2973	27	57	48	2981	27	57	48	2981	
	SUN	E.	73	38	0	3336	72	14	30	3347	70	51	13	3357	69	28	7	3366	69	28	7	3366	
6	Spica π	W.	81	16	28	3026	82	46	8	3033	84	15	40	3039	85	45	4	3044	85	45	4	3044	
	Antares	W.	35	29	5	3021	36	58	52	3026	38	28	32	3034	39	58	3	3041	39	58	3	3041	
	SUN	E.	62	35	25	3411	61	13	21	3419	59	51	26	3426	58	29	39	3433	58	29	39	3433	
7	Spica π	W.	93	10	31	3067	94	39	21	3071	96	8	6	3074	97	36	47	3077	97	36	47	3077	
	Antares	W.	47	24	7	3062	48	53	3	3065	50	21	56	3068	51	50	45	3071	51	50	45	3071	
	Saturn	W.	12	13	56	3145	13	41	11	3137	15	8	36	3132	16	36	7	3127	16	36	7	3127	
	Jupiter	W.	8	3	15	3159	9	30	13	3153	10	57	18	3149	12	24	28	3144	12	24	28	3144	
	SUN	E.	51	42	30	3462	50	21	23	3465	49	0	20	3469	47	39	21	3473	47	39	21	3473	
8	Spica π	W.	104	59	30	3086	106	27	57	3087	107	56	23	3087	109	24	48	3086	109	24	48	3086	
	Antares	W.	59	14	6	3079	60	42	41	3080	62	11	15	3081	63	39	48	3082	63	39	48	3082	
	Saturn	W.	23	54	23	3121	25	22	7	3120	26	49	52	3119	28	17	38	3117	28	17	38	3117	
	Jupiter	W.	19	40	29	3147	21	7	42	3147	22	34	55	3147	24	2	8	3146	24	2	8	3146	
	SUN	E.	40	55	30	3489	39	34	53	3491	38	14	19	3493	36	53	47	3495	36	53	47	3495	
14	SUN	W.	25	25	57	3315	26	49	51	3302	28	14	0	3290	29	38	23	3277	29	38	23	3277	
	Aldebaran	E.	50	7	44	2995	48	37	25	2993	47	7	3	2991	45	36	39	2989	45	36	39	2989	
	Pollux	E.	91	56	18	2916	90	24	20	2909	88	52	12	2902	87	19	53	2899	87	19	53	2899	
15	SUN	W.	36	43	43	3221	38	9	27	3211	39	35	23	3200	41	1	32	3189	41	1	32	3189	
	Aldebaran	E.	38	4	29	2994	36	34	9	2998	35	3	54	3004	33	33	46	3010	33	33	46	3010	
	Pollux	E.	79	36	4	2856	78	2	48	2848	76	29	22	2840	74	5	37	2832	74	5	37	2832	

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.	Midnight.	P. L. of diff.			XV ^h .			P. L. of diff.			XVIII ^h .			P. L. of diff.			XXI ^h .			P. L. of diff.		
		°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"
Regulus W.	78	45	36	2432	80	26	4	2432	82	6	5	2471	83	45	49	2509						
Spica π W.	24	47	42	2461	26	27	31	2476	28	6	59	2492	29	46	5	2608						
Antares E.	21	10	17	2439	19	29	44	2448	17	49	37	2467	16	9	56	2555						
Saturn E.	56	7	11	2457	54	27	17	2476	52	47	49	2495	51	8	47	2614						
Jupiter E.	59	39	23	2486	58	0	9	2464	56	21	20	2624	54	42	57	2643						
α Aquilæ E.	77	57	44	3149	76	30	34	3178	75	3	58	3205	73	37	55	3235						
SUN E.	114	37	20	2873	113	4	26	2894	111	31	59	2913	109	59	57	2934						
Regulus W.	91	57	23	2678	93	34	32	2695	95	11	17	2714	96	47	39	2730						
Spica π W.	37	56	6	2490	39	32	0	2702	41	9	33	2722	42	45	44	2738						
Saturn E.	42	59	56	2705	41	23	23	2722	39	47	13	2741	38	11	27	2758						
Jupiter E.	46	37	18	2734	45	1	23	2751	43	25	51	2768	41	50	41	2785						
α Aquilæ E.	66	36	46	3399	65	14	28	3436	63	52	52	3473	62	31	58	3514						
SUN E.	102	26	1	3200	100	56	26	3049	99	27	14	3068	97	58	25	3086						
Regulus W.	104	44	8	2809	106	18	24	2824	107	52	21	2838	109	26	9	2852						
Spica π W.	50	41	32	2812	52	13	43	2827	53	49	36	2842	55	23	10	2855						
Saturn E.	30	18	10	2841	28	44	35	2857	27	11	21	2872	25	38	26	2888						
Jupiter E.	34	0	18	2866	32	27	15	2880	30	54	31	2895	29	22	6	2909						
α Aquilæ E.	53	58	58	3738	54	42	51	3790	53	27	39	3845	52	13	23	3903						
SUN E.	90	39	41	3171	89	12	57	3187	87	46	32	3203	86	20	26	3218						
Spica π W.	63	6	51	2917	64	32	42	2922	66	10	31	2939	67	42	9	2950						
Saturn E.	17	58	54	2968	16	28	1	2986	14	57	31	3006	13	27	26	3028						
Jupiter E.	21	44	25	2977	20	13	43	2989	18	43	17	3001	17	13	6	3014						
SUN E.	79	14	16	3288	77	49	51	3300	76	25	39	3313	75	1	42	3325						
Spica π W.	75	16	17	2997	76	46	34	3002	72	16	41	3012	79	46	39	3019						
Antares W.	29	20	24	2990	30	50	49	2992	32	29	4	3006	33	59	9	3014						
SUN E.	62	2	14	3278	66	42	32	3266	65	22	6	3294	63	57	27	3204						
Spica π W.	87	14	22	3060	88	43	33	3055	90	12	38	3060	91	41	37	3064						
Antares W.	41	27	28	3042	42	56	47	3049	44	25	59	3054	45	55	5	3057						
SUN E.	57	2	1	3239	52	46	29	3242	54	25	2	3250	53	3	43	3255						
Spica π W.	99	5	23	3079	100	34	0	3082	102	2	32	3083	103	31	2	3085						
Antares W.	53	19	30	3074	54	48	12	3075	56	16	52	3077	57	45	30	3078						
Saturn W.	18	3	42	3126	19	31	20	3124	20	59	0	3124	22	26	41	3123						
Jupiter W.	13	51	39	3148	15	18	51	3147	16	46	4	3148	18	13	16	3147						
SUN E.	46	18	22	3277	44	57	32	3280	43	36	52	3283	42	16	9	3287						
Spica π W.	110	53	13	3087	112	21	38	3087	113	50	3	3087	115	18	29	3087						
Antares W.	65	8	21	3081	66	30	54	3080	68	5	22	3080	69	34	2	3078						
Saturn W.	29	43	26	3117	31	13	15	3116	32	41	5	3114	34	8	58	3113						
Jupiter W.	23	29	22	3145	26	56	37	3145	28	23	52	3143	29	51	10	3142						
SUN E.	35	33	18	3297	34	12	51	3299	32	52	26	3302	31	32	4	3304						
SUN W.	31	3	0	3266	32	27	51	3255	33	52	55	3243	35	18	13	3233						
Aldebaran E.	44	6	13	2989	42	32	46	2989	41	5	19	2989	39	34	53	2991						
Pollux E.	85	47	28	2887	84	14	52	2879	82	42	6	2871	81	9	10	2863						
SUN W.	42	27	53	3179	43	54	27	3167	45	21	16	3157	46	48	17	3145						
Aldebaran E.	32	2	42	3022	30	34	2	3022	29	4	33	3052	27	22	25	3073						
				2823				2815				2806										
					71	48	1						68	39	32							

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Noon.			P. L. of diff.	III ^h .			P. L. of diff.	VI ^h .			P. L. of diff.	IX ^h .		
			°	'	"		°	'	"		°	'	"		°	'	"
16	SUN	W.	48	15	32	3135	49	42	59	3124	51	10	40	3112	52	38	35
	Mars	W.	21	33	2	3152	23	0	9	3126	24	27	47	3104	25	55	52
	Aldebaran	E.	26	6	42	3100	24	38	32	3134	23	11	4	3178	21	44	29
	Pollux	E.	67	5	0	2789	65	30	18	2779	63	55	23	2771	62	20	17
	Regulus	E.	103	57	34	2766	102	22	22	2756	100	46	56	2747	99	11	18
17	SUN	W.	60	1	42	3042	61	31	3	3030	63	0	39	3017	64	30	31
	Mars	W.	33	22	17	2993	34	52	38	2978	36	23	19	2962	37	54	19
	α Arietis	W.	21	31	20	2792	23	5	59	2767	24	41	10	2744	26	16	51
	Pollux	E.	54	21	47	2717	52	45	29	2706	51	8	57	2698	49	32	14
	Regulus	E.	91	9	46	2684	89	32	45	2673	87	55	29	2662	86	17	58
18	SUN	W.	72	3	52	2939	73	35	21	2925	75	7	8	2912	76	39	12
	Mars	W.	45	34	12	2871	47	7	8	2857	48	40	22	2842	50	13	56
	α Arietis	W.	34	21	45	2634	35	59	54	2618	37	38	24	2602	39	17	16
	Pollux	E.	41	25	30	2648	39	47	34	2635	38	9	27	2627	36	31	9
	Regulus	E.	78	6	30	2592	76	27	24	2580	74	48	1	2567	73	8	21
19	SUN	W.	84	23	58	2828	85	57	50	2813	87	32	1	2798	89	6	31
	Mars	W.	58	6	35	2753	59	42	4	2738	61	17	54	2723	62	54	4
	α Arietis	W.	47	36	50	2512	49	17	46	2497	50	59	3	2482	52	40	41
	Aldebaran	W.	17	26	48	3179	18	53	22	3055	20	22	27	2954	21	53	37
	Pollux	E.	28	17	38	2600	26	38	43	2601	24	59	49	2606	23	21	2
Regulus	E.	64	45	38	2491	63	4	12	2477	61	22	27	2465	59	40	24	
20	SUN	W.	97	3	45	2711	98	40	10	2697	100	16	54	2682	101	53	57
	Mars	W.	70	59	52	2633	72	38	2	2619	74	16	31	2604	75	55	21
	α Arietis	W.	61	13	59	2396	62	57	40	2382	64	41	41	2367	66	26	3
	Aldebaran	W.	29	51	14	2609	31	29	57	2574	33	9	28	2541	34	49	44
	Pollux	E.	51	3	26	2386	49	21	31	2372	47	37	16	2359	45	52	42
Regulus	E.	105	8	19	2382	103	24	18	2363	101	39	57	2355	99	55	17	
21	SUN	W.	110	4	1	2598	111	42	59	2585	113	22	15	2572	115	1	49
	Mars	W.	84	14	29	2518	85	55	17	2504	87	36	25	2491	89	17	51
	α Arietis	W.	75	12	54	2285	76	59	16	2272	78	45	56	2258	80	32	57
	Aldebaran	W.	43	20	35	2390	45	4	24	2370	46	48	42	2351	48	33	28
	Pollux	E.	37	5	20	2285	35	18	58	2274	33	32	20	2263	31	45	26
Regulus	E.	91	7	0	2274	89	20	22	2262	87	33	26	2248	85	46	10	
22	SUN	W.	123	23	59	2498	125	5	15	2489	126	46	44	2478	128	28	28
	Mars	W.	97	49	35	2416	99	32	47	2404	101	16	16	2393	103	0	0
	α Arietis	W.	89	32	31	2187	91	21	18	2177	93	10	21	2166	94	59	40
	Aldebaran	W.	57	23	34	2252	59	10	44	2238	60	58	15	2225	62	46	5
	Pollux	W.	15	37	7	2495	17	18	27	2424	19	1	27	2369	20	45	46
Regulus	E.	22	47	28	2214	20	59	21	2211	19	11	10	2211	17	22	58	
Spica ♀	E.	76	45	22	2177	74	56	20	2166	73	7	2	2157	71	17	29	
23	Mars	W.	111	42	15	2338	113	27	19	2331	115	12	34	2324	116	57	59
	Aldebaran	W.	71	49	40	2189	73	39	9	2151	75	28	50	2143	77	18	44
	Pollux	W.	29	40	18	2191	31	28	59	2173	33	18	7	2159	35	7	36
	Spica ♀	E.	62	6	7	2103	60	15	13	2096	58	24	7	2090			
	Antares	E.	107	50	0	2096	105	58	54	2088	104	7	37	2081			

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.	Midnight.	P.L. of diff.	XV ^b .			P.L. of diff.	XVIII ^b .			P.L. of diff.	XXI ^b .			P.L. of diff.
			°	'	"		°	'	"		°	'	"	
SUN W.	54 6 44	3090	55	35	6	3077	57	3	44	3066	58	32	35	3053
Mars W.	27 24 23	3063	28	53	18	3044	30	22	36	3026	31	52	16	3009
Aldebaran E.	20 18 59	3207	18	54	55	3401	17	32	39	3325	16	12	42	3693
Pollux E.	60 45 0	2753	59	9	30	2744	57	33	48	2735	55	57	54	2725
Regulus E.	97 35 27	2727	95	59	23	2716	94	23	4	2706	92	46	32	2696
SUN W.	66 0 39	2991	67	31	3	2978	69	1	43	2966	70	32	39	2952
Mars W.	39 25 40	2931	40	57	19	2916	42	29	18	2901	44	1	36	2887
α Arietis W.	27 53 0	2704	29	29	35	2685	31	6	35	2667	32	43	59	2651
Pollux E.	47 53 18	2678	46	18	9	2669	44	40	48	2661	43	3	13	2652
Regulus E.	84 40 12	2640	83	2	11	2627	81	23	53	2616	79	45	20	2604
SUN W.	78 11 33	2584	79	44	12	2570	81	17	9	2556	82	50	23	2542
Mars W.	51 47 49	2512	53	22	1	2497	54	56	33	2482	56	31	24	2467
α Arietis W.	40 56 30	2572	42	36	3	2556	44	15	58	2542	45	56	13	2526
Pollux E.	34 52 42	2613	33	14	5	2605	31	35	21	2604	29	56	32	2601
Regulus E.	71 28 24	2542	69	48	9	2530	68	7	37	2516	66	26	46	2504
SUN W.	90 41 19	2770	92	16	27	2756	93	51	53	2740	95	27	49	2726
Mars W.	64 30 33	2693	66	7	23	2678	67	44	32	2663	69	22	2	2648
α Arietis W.	54 22 39	2453	56	4	58	2438	57	47	38	2424	59	30	38	2410
Aldebaran W.	23 26 32	2803	25	0	56	2744	26	36	37	2693	28	13	26	2649
Pollux E.	21 42 26	2622	20	4	9	2651	18	26	23	2683	16	49	20	2732
Regulus E.	57 58 2	2438	56	15	22	2424	54	32	22	2412	52	49	4	2398
SUN W.	103 31 20	2634	105	9	2	2640	106	47	2	2626	108	25	22	2612
Mars W.	77 34 31	2575	79	14	1	2561	80	53	50	2546	82	34	0	2532
α Arietis W.	68 10 43	2339	69	55	48	2326	71	41	10	2312	73	26	32	2298
Aldebaran W.	36 30 42	2484	38	12	18	2458	39	54	30	2434	41	37	16	2411
Regulus E.	44 7 50	2334	42	22	40	2321	40	37	11	2309	38	51	24	2297
Spica ♀ E.	98 10 17	2327	96	24	57	2313	94	39	17	2300	92	53	18	2287
SUN W.	116 41 41	2546	118	21	51	2534	120	2	17	2522	121	43	0	2510
Mars W.	90 59 36	2465	92	41	39	2452	94	24	0	2439	96	6	39	2427
α Arietis W.	82 20 15	2233	84	7	53	2222	85	55	48	2210	87	44	1	2198
Aldebaran W.	50 18 40	2315	52	4	18	2298	53	50	20	2282	55	36	46	2267
Regulus E.	29 58 16	2243	28	10	53	2233	26	23	15	2226	24	35	27	2219
Spica ♀ E.	83 58 36	2224	82	10	44	2212	80	22	34	2200	78	34	6	2189
SUN W.	130 10 27	2489	131	52	38	2450	133	35	1	2443	135	17	35	2425
Mars W.	104 44 0	2373	106	28	13	2363	108	12	41	2354	109	57	22	2346
α Arietis W.	96 49 14	2146	98	39	3	2137	100	29	5	2128	102	19	22	2120
Aldebaran W.	64 34 14	2200	66	22	41	2189	68	11	25	2179	70	0	23	2169
Pollux W.	22 31 9	2289	24	17	25	2258	26	4	26	2233	27	52	5	2210
Regulus E.	15 34 52	2223	13	46	59	2243	11	59	36	2277	10	13	3	2241
Spica ♀ E.	69 27 41	2137	67	37	38	2127	65	47	20	2119	63	56	50	2111
Mars W.	118 43 32	2312	120	29	14	2308	122	15	2	2303	124	0	57	2300
Aldebaran W.	79 8 50	2129	80	59	5	2123	82	49	29	2117	84	40	2	2113
Pollux W.	36 57 26	2138	38	47	34	2124	40	37	57	2115	42	28	34	2107
Spica ♀ E.	54 41 27	2078	52	49	54	2073	50	58	13	2069	49	6	26	2066
Spica ♀ E.	100 24 31	2069	98	32	44	2064	96	40	49	2059	94	48	46	2055

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.	P. L. of diff.	III ^h .	P. L. of diff.	VI ^h .	P. L. of diff.	IX ^h .
24	Aldebaran W.	86 30 41	2110	83 21 23	2107	90 12 14	2104	92 3 7
	Pollux W.	44 19 23	2100	46 10 22	2094	48 1 31	2090	49 52 45
	Spica η E.	47 14 34	2062	45 23 37	2060	43 30 37	2059	41 26 35
	Antares E.	92 56 36	2052	91 4 24	2049	89 13 6	2046	87 19 44
25	Pollux W.	59 10 4	2080	61 1 34	2081	62 53 2	2084	64 44 26
	Regulus W.	22 8 13	2086	23 59 34	2084	25 50 58	2083	27 42 24
	Spica η E.	32 18 39	2069	30 26 52	2075	28 35 14	2081	26 43 45
	Antares E.	77 57 42	2048	76 5 22	2051	74 13 7	2053	72 20 36
	Saturn E.	114 21 16	2064	112 29 21	2066	110 37 29	2069	108 45 42
	Jupiter E.	120 3 29	2066	118 12 9	2068	116 20 50	2091	114 29 37
26	Pollux W.	73 59 54	2113	75 50 33	2121	77 41 0	2129	79 31 15
	Regulus W.	36 58 45	2103	38 49 40	2109	40 40 25	2113	42 30 57
	Antares E.	63 1 55	2087	61 10 36	2095	59 19 30	2104	57 23 37
	Saturn E.	99 28 38	2103	97 37 43	2110	95 47 0	2118	93 56 29
	Jupiter E.	105 15 25	2123	103 25 4	2132	101 34 54	2142	99 44 39
27	Pollux W.	88 38 44	2193	90 27 22	2205	92 15 42	2219	94 3 41
	Regulus W.	51 40 10	2177	53 29 12	2190	55 17 55	2203	57 6 18
	Antares E.	48 18 3	2169	46 28 49	2181	44 39 53	2195	42 51 18
	Saturn E.	84 47 47	2183	82 58 54	2196	81 10 20	2209	79 22 6
	Jupiter E.	90 39 6	2206	88 50 47	2219	87 2 47	2232	85 15 7
	α Aquilæ E.	101 33 28	2273	99 58 20	2279	98 23 24	2287	96 48 39
28	Regulus W.	66 3 4	2229	67 49 19	2206	69 35 10	2222	71 20 27
	Spica η W.	12 14 41	2400	13 58 15	2390	15 42 4	2389	17 25 53
	Antares E.	33 53 41	2223	32 7 17	2300	30 21 18	2317	28 35 43
	Saturn E.	70 26 15	2298	68 40 12	2314	66 54 33	2331	65 9 18
	Jupiter E.	76 22 3	2321	74 36 34	2337	72 51 28	2354	71 6 47
	α Aquilæ E.	88 58 31	2362	87 25 25	2381	85 52 42	2391	84 20 24
29	Regulus W.	80 1 46	2426	81 44 44	2443	83 27 17	2461	85 9 23
	Spica η W.	26 2 28	2448	27 44 54	2463	29 27 0	2479	31 8 43
	Saturn E.	56 29 14	2435	54 46 29	2453	53 4 9	2472	51 22 16
	Jupiter E.	62 29 26	2458	60 47 13	2476	59 5 26	2494	57 24 4
	α Aquilæ E.	76 45 46	3041	75 16 24	3068	73 47 35	3098	72 19 23
	Fomalhaut E.	101 17 36	2825	99 43 40	2838	98 10 2	2852	96 36 42
	Sun E.	140 33 34	2779	138 58 39	2797	137 24 7	2814	135 49 57
30	Regulus W.	93 33 41	2570	95 13 17	2589	96 52 27	2607	98 31 13
	Spica η W.	39 31 37	2578	41 11 2	2596	42 50 2	2613	44 28 40
	Saturn E.	42 59 11	2582	41 19 51	2600	39 40 56	2618	38 2 26
	Jupiter E.	49 3 35	2603	47 24 44	2622	45 46 19	2640	44 8 18
	α Aquilæ E.	65 8 0	3301	63 43 50	3340	62 20 25	3382	60 57 49
	Fomalhaut E.	88 55 19	2956	87 24 11	2974	85 53 26	2992	84 23 7
	Sun E.	128 5 0	2924	126 33 11	2943	125 1 47	2961	123 30 45
31	Spica η W.	52 35 58	2718	54 12 18	2732	55 48 1	2744	57 23 53
	Saturn E.	29 56 3	2726	28 19 58	2744	26 44	2753	25 53
	Jupiter E.	86 4 13	2743	84 28 33	2763	82 53		
	Fomalhaut E.	76 57 55	3123	75 30 13	3145			
	Sun E.	116 1 26	3072	114 32 42	3090			

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.	Midnight.			P. L. of diff.	XV ^a .			P. L. of diff.	XVIII ^b .			P. L. of diff.	XXI ^b .			P. L. of diff.
	°	'	"		°	'	"		°	'	"		°	'	"	
Aldebaran W.	93	54	2	2103	95	44	57	2102	97	35	53	2104	99	26	46	2105
Pollux W.	51	44	8	2083	53	35	34	2081	55	27	3	2080	57	18	33	2079
Spica ♀ E.	39	46	33	2059	37	54	30	2060	36	2	29	2063	34	10	32	2065
Antares E.	85	27	21	2044	83	34	55	2044	81	42	30	2044	79	50	5	2046
Pollux W.	66	35	46	2090	68	27	0	2095	70	18	7	2101	72	9	5	2107
Regulus W.	29	33	49	2085	31	25	12	2088	33	16	30	2092	35	7	41	2097
Spica ♀ E.	24	52	28	2098	23	1	25	2109	21	10	40	2123	19	20	16	2140
Antares E.	70	28	51	2062	68	36	54	2067	66	45	4	2073	64	53	24	2081
Saturn E.	106	54	1	2078	105	2	28	2083	103	11	2	2088	101	19	45	2095
Jupiter E.	112	38	31	2100	110	47	31	2105	108	56	40	2111	107	5	57	2118
Pollux W.	81	21	15	2147	83	11	2	2158	85	0	32	2169	86	49	47	2181
Regulus W.	44	21	18	2185	46	11	24	2144	48	1	16	2155	49	50	51	2166
Antares E.	55	37	59	2124	53	47	35	2134	51	57	27	2145	50	7	36	2157
Saturn E.	92	6	13	2138	90	16	12	2148	88	26	26	2160	86	36	58	2171
Jupiter E.	97	55	17	2160	96	5	49	2171	94	16	38	2182	92	27	43	2194
Pollux W.	95	51	20	2247	97	38	38	2262	99	25	34	2277	101	12	7	2293
Regulus W.	58	54	22	2230	60	42	5	2244	62	29	27	2259	64	16	27	2275
Antares E.	41	3	3	2223	39	15	9	2237	37	27	37	2252	35	40	27	2268
Saturn E.	77	34	12	2237	75	46	40	2252	73	59	29	2266	72	12	40	2282
Jupiter E.	83	27	47	2260	81	40	48	2275	79	54	11	2289	78	7	56	2304
α Aquilæ E.	95	14	6	2307	93	39	47	2318	92	5	43	2332	90	31	57	2348
Regulus W.	73	5	40	2355	74	50	19	2373	76	34	33	2390	78	18	22	2408
Spica ♀ W.	19	9	40	2399	20	53	16	2409	22	36	37	2421	24	19	42	2434
Antares E.	26	50	32	2351	25	5	47	2368	23	21	26	2386	21	37	31	2404
Saturn E.	63	24	27	2364	61	40	1	2382	59	56	0	2399	58	12	24	2417
Jupiter E.	69	22	29	2387	67	38	36	2404	65	55	7	2422	64	12	4	2440
α Aquilæ E.	82	48	31	2942	81	17	6	2965	79	46	9	2989	78	15	42	3014
Regulus W.	86	51	7	2497	88	32	24	2516	90	13	15	2534	91	53	41	2553
Spica ♀ W.	32	50	4	2511	34	31	2	2528	36	11	37	2544	37	51	49	2561
Saturn E.	49	40	48	2507	47	59	45	2526	46	19	8	2545	44	38	57	2563
Jupiter E.	55	43	7	2530	54	2	36	2548	52	22	30	2567	50	42	50	2585
α Aquilæ E.	70	51	47	3159	69	24	49	3192	67	58	31	3227	66	32	54	3264
Fomalhaut E.	95	3	43	2884	93	31	4	2901	91	58	47	2918	90	26	51	2937
SUN E.	134	16	10	2850	132	42	47	2869	131	9	48	2887	129	37	12	2905
Regulus W.	100	9	34	2643	101	47	31	2661	103	25	4	2678	105	2	13	2696
Spica ♀ W.	46	6	53	2647	47	44	44	2665	49	22	11	2681	50	59	16	2698
Saturn E.	36	24	20	2655	34	46	40	2672	33	9	23	2691	31	32	31	2709
Jupiter E.	42	30	41	2676	40	53	29	2693	39	16	40	2711	37	40	15	2729
α Aquilæ E.	59	36	1	3470	58	15	4	3519	56	55	1	3568	55	35	52	3622
Fomalhaut E.	82	53	12	3035	81	23	43	3057	79	54	41	3078	78	26	4	3101
SUN E.	122	0	8	2998	120	29	53	3017	119	0	1	3036	117	30	33	3053
Spica ♀ W.	58	59	8	2779	60	34	3	2795	62	8	38	2810	63	42	53	2825
Saturn E.	23	34	4	2797	21	59	32	2815	20	25	23	2832	18	51	37	2850
Jupiter E.	29	43	47	2811	28	9	34	2828	26	35	42	2843	25	2	10	2858
α Aquilæ E.	71	9	55	3217	69	44	6	3242	68	18	47	3268	66	53	58	3294
SUN E.	110	8	39	3141	108	41	19	3158	107	14	20	3175	105	47	41	3191

CONFIGURATIONS OF THE SATELLITES OF JUPITER

At 17^h 30^m, MEAN TIME.

Day of the Month.	<i>West.</i>				<i>East.</i>			
1			1.	○	2.	3.		4.
2	2. ○			○	1.	3.		4.
3			.2	.1 3.	○			4.
4			3.	○	1. 2.			4.
5	.1 ●		.3	○	2.		4.	
6			2. 3.	1. ○	4.			
7				.2 4.	○	.1	.3	
8			4.	1.	○		.2	.3
9		4.			○	1.	3.	
10	4.		.2	.1	○			
11	.4		3.		○	.2 1.		
12	.4	.3		.1	○	2.		
13		.4	.3 2.	○				
14			.4	.2	○	.1	.3	
15				1. .4	○	.2	.3	
16					○	2.	.1 .4	3.
17			.2	.1	○	3.		4.
18	.2 ●		3.		○	1.		4.
19			.3	.1	○	2.		4.
20			.3	2.	○	1.		4.
21	.1 ●		.2		○	.3		4.
22				1.	○	.2	.3	4.
23					○	2. 1.		3.
24			2.	1. 4.	○	3.		
25	.2 ●		4.	3.	○	1.		
26		4.	3.	.1	○	2.		
27		4.	.3	2.	○	1.		
28	.1 ●	.4		.2	○			●
29		.4			○	.2	.3	
30		.4			○	.1 2.	3.	
31			.4	1.	○	3.		

This Table represents, at 17^h 30^m after *Mean Noon* of each day of the month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page, the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the numeral. A white circle (○) at the left or right hand of the page, denotes that the Satellite placed there is on the disc of Jupiter, and a black circle (●) that it is either *behind* the disc, or *in front* of Jupiter.

ECLIPSES OF THE SATELLITES OF JUPITER.

ITR.	Day of the Month.	Mean Time.	Sidereal Time.	PHASE as seen in an inverting Telescope.
	2	^h 3 ^m 26 ^s 37·9	^h 2 ^m 6 ^s 39·3	Im.
	3	21 53 3·3	20 42 3·4	Im.
	5†	16 23 23·8	15 17 22·6	Im.
	7	10 51 47·4	9 52 44·8	Im.
	9	5 20 7·0	4 28 3·0	Im.
	10	23 48 32·4	23 3 27·0	Im.
	12†	18 16 52·9	17 38 46·1	Im.
	14	12 45 16·3	12 14 8·2	Im.
	16	7 13 35·7	6 49 26·2	Im.
	18	1 42 1·3	1 24 50·4	Im.
	19	20 10 21·6	20 0 9·4	Im.
	21	14 38 45·1	14 35 31·4	Im.
	23	9 7 4·4	9 10 49·4	Im.
	25	3 35 30·3	3 46 14·0	Im.
	26	22 3 50·5	22 21 32·7	Im.
	28*	16 32 14·5	16 56 55·4	Im.
	30	11 0 33·9	11 32 13·4	Im.
	4	7 41 11·2	6 29 47·6	Im.
	7	20 58 25·3	20 1 2·3	Im.
	11	10 16 3·4	9 32 41·1	Im.
	14	23 33 14·2	23 3 52·5	Im.
	18	12 50 44·7	12 35 23·7	Im.
	22	2 7 52·1	2 6 31·7	Im.
	25†	15 25 15·6	15 37 55·9	Im.
	29	4 42 19·8	5 9 0·7	Im.
	6	21 53 11·8	20 52 1·3	Im.
	7	0 56 29·2	23 55 48·7	Em.
	14	1 51 12·6	1 18 17·0	Im.
	14	4 55 19·4	4 22 54·0	Em.
	21	5 49 20·2	5 44 39·6	Im.
	21	8 54 17·1	8 50 6·9	Em.
	28	9 48 6·1	10 11 40·6	Im.
	28	12 53 52·6	13 17 57·6	Em.
	13	10 10 7·5	9 42 30·4	Im. i e
	13	12 13 41·5	11 46 24·7	Em. * *



APPROXIMATE SIDEREAL TIMES
OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER
AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.			TRANSITS OF SATELLITES.				TRANSITS OF SHA		
	Immersion.	Emersion.		Ingress.			Egress.			Ingress.
I.	d h m	d h m	d h m	d h m	d h m	d h m	d h m	d h m	d	
In the Shadow.		2 5 27	1 5 57	1 8 15	1 4 53	1				
		4 0 3	3 0 33	3 2 51	3 23 28	3				
		5 18 40	4 19 9	4 21 28	4 18 4	4 2				
		7 13 16	6 13 46	6† 16 4	6 12 39	6 1				
		9 7 53	8 8 22	8 10 41	8 7 14	8				
		11 2 29	10 2 59	10 5 17	10 1 50	10				
		12 21 5	11 21 35	12 23 53	11 20 25	11 23				
		14† 15 41	13† 16 11	13 18 30	13 15 1	13† 11				
		16 10 18	15 10 48	15 13 6	15 9 36	15 11				
		18 4 54	17 5 24	17 7 42	17 4 11	17				
		19 23 30	19 0 0	19 2 18	18 22 47	19				
		21 18 6	20 18 36	20 20 54	20† 17 22	20 15				
		23 12 42	22 13 12	22† 15 30	22 11 57	22 14				
		25 7 18	24 7 48	24 10 6	24 6 33	24 8				
		27 1 54	26 2 24	26 4 42	26 1 8	26 3				
		28 20 30	27 21 0	27 23 18	27 19 43	27 23				
		30 15 6	29† 15 35	29† 17 54	29 14 19	29† 16				
			31 10 11	31 12 30	31 8 54	31 11				
In the Shadow.		4 11 30	2 13 22	2† 16 13	2 11 13	2 14				
		8 1 6	6 2 58	6 5 49	6 0 44	6 3				
		11 14 42	9* 16 33	9 19 25	9 14 16	9† 17				
		15 4 16	13 6 8	13 9 0	13 3 47	13 6				
		18† 17 51	16 19 43	16 22 35	16† 17 19	16 20				
		22 7 25	20 9 17	20 12 9	20 6 50	20 9				
		25 20 59	23 22 51	24 1 43	23 20 21	23 23				
		29 10 32	27 12 24	27 15 17	27 9 53	27 12				
		31 1 58	31 4 51	30 23 24	31 2					
III.	7 1 17	7 4 36	3 11 8	3 14 27	3 6 48	3 10				
	14 5 59	14 9 20	10† 15 52	10 19 12	10 11 14	10 14				
	21 10 39	21 14 0	17 20 34	18 23 55	17† 15 41	17 18				
	28 15 15	28 18 38	25 1 11	25 4 33	24 20 8	24 23				
				31 0 34	32 3					
IV.	15 20 33	15 23 23	7 11 12	7 13 54	7 1 3	7				
			24 7 28	24 10 25	23 20 6	3 2				

For correcting the Places of the Fixed Stars. At Mean Midnight,				Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 03:56:399 Days.	From Mean Noon of January 1.	
Logarithm of						Day of the Year.	Fraction of the Year.
A	B	C	D				
-1 2471	+0 8205	+9 6803	-0 6801	^h 1 ^m 24 ^s 15 20	343	59	162
1 2496	0 7977	9 6823	0 6804	1 20 19 30	344	60	164
1 2520	0 7736	9 6842	0 6807	1 16 23 39	345	61	167
-1 2542	+0 7479	+9 6862	-0 6810	1 12 27 48	346	62	170
1 2563	0 7205	9 6881	0 6812	1 8 31 57	347	63	172
1 2583	0 6911	9 6900	0 6814	1 4 35 66	348	64	175
-1 2601	+0 6594	+9 6918	-0 6815	1 0 39 76	349	65	178
1 2618	0 6251	9 6937	0 6816	0 56 43 85	350	66	181
1 2633	0 5877	9 6955	0 6816	0 52 47 94	351	67	183
-1 2647	+0 5467	+9 6973	-0 6815	0 48 52 04	352	68	186
1 2660	0 5012	9 6991	0 6814	0 44 56 13	353	69	189
1 2671	0 4503	9 7009	0 6812	0 41 0 22	354	70	192
-1 2681	+0 3926	+9 7027	-0 6810	0 37 4 31	355	71	194
1 2689	0 3259	9 7044	0 6807	0 33 8 41	356	72	197
1 2697	0 2470	9 7062	0 6803	0 29 12 50	357	73	200
-1 2703	+0 1504	+9 7079	-0 6799	0 25 16 59	358	74	203
1 2707	0 0258	9 7096	0 6794	0 21 20 68	359	75	205
1 2710	9 8503	9 7113	0 6789	0 17 24 78	360	76	208
-1 2712	+9 5513	+9 7130	-0 6783	0 13 28 87	361	77	211
1 2713	+7 5245	9 7147	0 6777	0 9 32 96	362	78	214
1 2712	-9 5428	9 7164	0 6770	0 5 37 06	363	79	216
-1 2710	-9 8457	+9 7181	-0 6762	^h 23 ^m 53 ^s 49 33	364	80	219
1 2707	0 0222	9 7198	0 6753	23 53 49 33	0	81	222
1 2703	0 1472	9 7215	0 6744	23 49 53 42	1	82	225
-1 2697	-0 2440	+9 7231	-0 6735	23 45 57 52	2	83	227
1 2690	0 3229	9 7248	0 6725	23 42 1 61	3	84	230
1 2681	0 3896	9 7265	0 6714	23 38 5 70	4	85	233
-1 2672	-0 4472	+9 7281	-0 6702	23 34 9 79	5	86	235
1 2661	0 4979	9 7298	0 6690	23 30 13 89	6	87	238
1 2648	0 5432	9 7315	0 6677	23 26 17 98	7	88	241
1 2635	0 5840	9 7332	0 6664	23 22 22 07	8	89	244
-1 2620	-0 6212	+9 7348	-0 6650	23 18 26 17	9	90	246

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Sideral Time of the Semidiam. passing the Meridian.*	Equation of Time, to be added to <i>subt.</i> from Apparent Time.
		Apparent Right Ascension.	Diff. for 1 hour.	Apparent Declination.	Diff. for 1 hour.		
Frid.	1	h m s 0 41 45·93	9·094	N. 4 29 50·4	57·75	m s 1 4·42	m s 4 1·16
Sat.	2	0 45 24·18	9·100	4 52 56·5	57·54	1 4·44	3 42·91
Sun.	3	0 49 2·58	9·107	5 15 57·5	57·31	1 4·46	3 24·81
Mon.	4	0 52 41·14	9·114	5 38 52·9	57·07	1 4·48	3 6·86
Tues.	5	0 56 19·88	9·123	6 1 42·6	56·82	1 4·51	2 49·10
Wed.	6	0 59 58·83	9·132	6 24 26·3	56·55	1 4·54	2 31·54
Thur.	7	1 3 37·99	9·141	6 47 3·4	56·26	1 4·57	2 14·19
Frid.	8	1 7 17·36	9·151	7 9 33·6	55·95	1 4·60	1 57·06
Sat.	9	1 10 56·98	9·162	7 31 56·5	55·64	1 4·64	1 40·17
Sun.	10	1 14 36·87	9·173	7 54 11·9	55·30	1 4·68	1 23·55
Mon.	11	1 18 17·02	9·185	8 16 19·2	54·96	1 4·72	1 7·19
Tues.	12	1 21 57·46	9·197	8 38 18·3	54·60	1 4·76	0 51·12
Wed.	13	1 25 38·19	9·210	9 0 8·7	54·22	1 4·81	0 35·34
Thur.	14	1 29 19·23	9·224	9 21 50·0	53·83	1 4·86	0 19·87
Frid.	15	1 33 0·60	9·238	9 43 21·9	53·43	1 4·91	0 4·72
Sat.	16	1 36 42·30	9·252	10 4 44·1	53·00	1 4·96	0 10·09
Sun.	17	1 40 24·35	9·267	10 25 56·2	52·57	1 5·01	0 24·55
Mon.	18	1 44 6·77	9·283	10 46 57·9	52·13	1 5·07	0 38·65
Tues.	19	1 47 49·56	9·300	11 7 49·0	51·67	1 5·13	0 52·38
Wed.	20	1 51 32·75	9·316	11 28 29·0	51·20	1 5·19	1 5·71
Thur.	21	1 55 16·34	9·334	11 48 57·6	50·71	1 5·25	1 18·64
Frid.	22	1 59 0·35	9·352	12 9 14·6	50·21	1 5·31	1 31·14
Sat.	23	2 2 44·80	9·371	12 29 19·7	49·70	1 5·38	1 43·22
Sun.	24	2 6 29·71	9·390	12 49 12·5	49·17	1 5·45	1 54·83
Mon.	25	2 10 15·08	9·411	13 8 52·7	48·64	1 5·52	2 5·98
Tues.	26	2 14 0·94	9·432	13 28 20·0	48·09	1 5·59	2 16·65
Wed.	27	2 17 47·30	9·453	13 47 34·2	47·53	1 5·66	2 26·82
Thur.	28	2 21 34·17	9·475	14 6 34·9	46·95	1 5·73	2 36·47
Frid.	29	2 25 21·56	9·497	14 25 21·8	46·36	1 5·80	2 45·61
Sat.	30	2 29 9·49	9·520	14 43 54·6		5·88	2 54·21
Sun.	31	2 32 57·98		N. 15 2 12			6

* Mean Time of the Semidiameter passing may be

AT MEAN NOON.

	Day of the Month.	THE SUN'S			Equation of Time, to be subtr. from added to Mean Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semidiam.*		
d.	1	h m s 0 41 45.32	N. ° ' " 4 29 46.5	' " 16 0.8	m s 4 1.21	h m s 0 37 44.11
.	2	0 45 23.62	4 52 52.9	16 0.6	3 42.96	0 41 40.66
.	3	0 49 2.07	5 15 54.2	16 0.3	3 24.85	0 45 37.22
n.	4	0 52 40.67	5 38 49.9	16 0.0	3 6.90	0 49 33.77
es.	5	0 56 19.45	6 1 39.9	15 59.7	2 49.13	0 53 30.32
d.	6	0 59 58.44	6 24 23.9	15 59.5	2 31.57	0 57 26.88
ar.	7	1 3 37.65	6 47 1.3	15 59.2	2 14.22	1 1 23.43
d.	8	1 7 17.07	7 9 31.7	15 58.9	1 57.08	1 5 19.98
.	9	1 10 56.73	7 31 53.0	15 58.6	1 40.19	1 9 16.54
i.	10	1 14 36.65	7 54 10.6	15 58.3	1 23.56	1 13 13.09
n.	11	1 18 16.85	8 16 18.2	15 58.0	1 7.20	1 17 9.64
es.	12	1 21 57.33	8 38 17.5	15 57.8	0 51.13	1 21 6.20
d.	13	1 25 38.10	9 0 8.1	15 57.5	0 35.35	1 25 2.75
ir.	14	1 29 19.18	9 21 49.7	15 57.3	0 19.87	1 28 59.31
d.	15	1 33 0.58	9 43 21.8	15 57.0	0 4.72	1 32 55.86
.	16	1 36 42.33	10 4 44.2	15 56.8	0 10.09	1 36 52.41
i.	17	1 40 24.42	10 25 56.6	15 56.5	0 24.55	1 40 48.97
n.	18	1 44 6.87	10 46 58.5	15 56.3	0 38.66	1 44 45.52
es.	19	1 47 49.69	11 7 49.8	15 56.0	0 52.39	1 48 42.08
d.	20	1 51 32.91	11 28 29.9	15 55.7	1 5.72	1 52 38.63
ir.	21	1 55 16.54	11 48 58.8	15 55.5	1 18.65	1 56 35.19
d.	22	1 59 0.58	12 9 15.9	15 55.2	1 31.16	2 0 31.74
.	23	2 2 45.07	12 29 21.1	15 55.0	1 43.23	2 4 28.30
i.	24	2 6 30.01	12 49 14.1	15 54.7	1 54.84	2 8 24.85
n.	25	2 10 15.41	13 8 54.4	15 54.5	2 5.99	2 12 21.40
es.	26	2 14 1.30	13 28 21.9	15 54.2	2 16.66	2 16 17.96
d.	27	2 17 47.68	13 47 36.2	15 54.0	2 26.83	2 20 14.52
ar.	28	2 21 34.58	14 6 36.9	15 53.7	2 36.49	2 24 11.07
d.	29	2 25 22.00	14 25 23.9	15 53.5	2 45.63	2 28 7.63
.	30	2 29 9.95	14 43 56.8	15 53.2	2 54.23	2 32 4.18
i.	31	2 32 58.46	N. 15 2 15.2	15 53.0	3 2.28	2 36 0.74

* Semidiameter for Apparent Noon may be assumed the same as that for Mean Noon

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S			
	Longitude.	Latitude.		Semidiameter.		Horizontal Para.	
	Noon.	Noon.	Noon.	Noon.	Midnight.	Noon.	M. T.
1	11 21 22.0	N.0.07	0.0000311	15 10.6	15 5.0	55 41.8	55
2	12 20 27.8	0.18	0.0001592	15 0.0	14 55.5	55 2.6	54
3	13 19 31.9	0.31	0.0002873	14 51.9	14 48.9	54 32.9	54
4	14 18 34.2	0.44	0.0004152	14 46.6	14 45.0	54 13.4	54
5	15 17 34.7	0.57	0.0005427	14 44.0	14 43.7	54 4.0	54
6	16 16 33.6	0.69	0.0006697	14 43.9	14 44.8	54 3.8	54
7	17 15 30.7	0.80	0.0007960	14 46.1	14 47.8	54 11.6	54
8	18 14 25.8	0.89	0.0009215	14 50.0	14 52.6	54 26.1	54
9	19 13 19.0	0.95	0.0010460	14 55.5	14 58.7	54 46.2	54
10	20 12 10.3	0.98	0.0011696	15 2.0	15 5.6	55 10.2	55
11	21 10 59.6	0.98	0.0012921	15 9.4	15 13.2	55 37.1	55
12	22 9 46.9	0.95	0.0014136	15 17.2	15 21.2	56 5.9	56
13	23 8 32.0	0.89	0.0015341	15 25.3	15 29.4	56 35.7	56
14	24 7 14.9	0.81	0.0016536	15 33.6	15 37.8	57 6.1	57
15	25 5 55.7	0.70	0.0017721	15 42.0	15 46.2	57 36.9	57
16	26 4 34.3	0.58	0.0018898	15 50.4	15 54.5	58 7.6	58
17	27 3 10.7	0.44	0.0020068	15 58.5	16 2.5	58 37.6	58
18	28 1 44.8	0.30	0.0021230	16 6.3	16 9.8	59 5.9	59
19	29 0 16.7	0.17	0.0022385	16 13.0	16 15.8	59 30.6	59
20	29 58 46.5	N.0.05	0.0023536	16 18.1	16 19.7	59 49.3	59
21	30 57 14.1	S.0.05	0.0024682	16 20.8	16 21.1	59 59.1	60
22	31 55 39.6	0.13	0.0025825	16 20.5	16 19.1	59 58.8	59
23	32 54 3.1	0.18	0.0026965	16 16.9	16 13.8	59 45.0	59
24	33 52 24.7	0.21	0.0028102	16 10.0	16 5.5	59 19.7	59
25	34 50 44.4	0.21	0.0029237	16 0.3	15 54.7	58 44.1	58
26	35 49 2.2	0.17	0.0030369	15 48.6	15 42.2	58 1.0	57
27	36 47 18.4	0.11	0.0031497	15 35.8	15 29.3	57 14.0	56
28	37 45 32.9	S.0.02	0.0032620	15 23.0	15 16.9	56 27.8	56
29	38 43 45.7	N.0.09	0.0033738	15 11.2	15 5.9	55 43.8	55
30	39 41 57.1	0.21	0.0034849	15 1.1	14		54
31	40 40 7.0	N.0.36	0.0035951	14 53.3	14		

MEAN TIME.

Day of the Month.	THE MOON'S							
	Longitude.			Latitude.			Age.	Meridian
	Noon.	Midnight.		Noon.	Midnight.	Noon.	Passage.	
1	266 ^o 59 ⁱ 10 ⁿ 1	273 ^o 11 ⁱ 30 ⁿ 9	S. 2 30 41 8	S. 2 1 14 6	20 2	17 46 5		
2	279 19 7 7	285 22 39 8	1 30 44 5	S. 0 59 32 2	21 2	18 36 7		
3	291 22 48 7	297 20 15 6	S. 0 27 57 7	N. 0 3 40 5	22 2	19 23 7		
4	303 15 42 0	309 9 48 4	N. 0 35 4 8	1 5 58 0	23 2	20 7 9		
5	315 3 13 6	320 56 34 2	1 36 3 3	2 5 4 5	24 2	20 50 0		
6	326 50 24 2	332 45 14 8	2 32 45 8	2 58 50 6	25 2	21 30 7		
7	338 41 35 0	344 39 48 6	3 23 2 9	3 45 7 4	26 2	22 11 0		
8	350 40 17 4	356 43 18 7	4 4 48 1	4 21 50 8	27 2	22 51 8		
9	2 49 6 0	8 57 48 8	4 36 0 0	4 47 3 1	28 2	23 34 1		
10	15 9 33 8	21 24 24 2	4 54 48 8	4 59 5 7	29 2	♄		
11	27 42 21 0	34 3 21 8	4 59 45 6	4 56 44 0	0 6	0 18 9		
12	40 27 23 9	46 54 23 3	4 49 57 3	4 39 24 7	1 6	1 6 8		
13	53 24 16 1	59 56 58 2	4 25 9 9	4 7 18 8	2 6	1 58 4		
14	66 32 28 0	73 10 43 1	3 46 1 5	3 21 30 3	3 6	2 53 4		
15	79 51 45 5	86 35 36 1	2 54 1 1	2 23 53 7	4 6	3 50 9		
16	93 22 19 9	100 12 0 6	1 51 29 8	1 17 14 5	5 6	4 49 3		
17	107 4 43 6	114 0 33 0	N. 0 41 35 5	N. 0 5 2 3	6 6	5 46 8		
18	120 59 33 2	128 1 43 8	S. 0 31 51 8	S. 1 8 33 5	7 6	6 42 3		
19	135 7 2 5	142 15 21 3	1 44 27 3	2 18 57 3	8 6	7 35 5		
20	149 26 26 8	156 39 58 2	2 51 26 5	3 21 21 0	9 6	8 26 8		
21	163 55 28 8	171 12 23 0	3 48 6 4	4 11 13 3	10 6	9 17 1		
22	178 29 59 6	185 47 31 2	4 30 14 9	4 44 51 7	11 6	10 7 4		
23	193 4 6 9	200 18 53 6	4 54 47 9	4 59 56 7	12 6	10 58 7		
24	207 30 58 3	214 39 30 7	5 0 16 0	4 55 52 6	13 6	11 51 9		
25	221 43 45 5	228 43 2 5	4 46 57 3	4 33 48 6	14 6	12 47 0		
26	235 36 51 3	242 24 48 9	4 16 47 2	3 56 18 6	15 6	13 43 6		
27	249 6 43 0	255 42 28 3	3 32 48 6	3 6 46 1	16 6	14 40 3		
28	262 12 10 2	268 36 1 4	2 38 38 2	2 8 52 0	17 6	15 35 5		
29	274 54 21 6	281 7 36 8	1 37 53 6	1 6 7 4	18 6	16 27 9		
30	287 16 17 3	293 20 57 5	S. 0 33 56 1	S. 0 1 40 9	19 6	17 16 9		
	292 15 4	305 20 49 7	N. 0 30 18 8	N. 1 1 44 6	20 6	18 2 7		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{ns} .	Hour.	Right Ascension.	Declination.	
<i>FRIDAY 1.</i>				<i>SUNDAY 3.</i>			
	^h ^m ^s	[°] ['] ["]	["]		^h ^m ^s	[°] ['] ["]	
0	17 46 36.34	S. 25 56 15.7	17.42	0	19 32 45.70	S. 22 13 15.0	
1	17 48 55.28	25 54 31.2	18.77	1	19 34 51.32	22 5 54.6	
2	17 51 14.00	25 52 38.6	20.13	2	19 36 56.64	21 58 28.6	
3	17 53 32.48	25 50 37.8	21.47	3	19 39 1.67	21 50 56.8	
4	17 55 50.73	25 48 29.0	22.80	4	19 41 6.41	21 43 19.5	
5	17 58 8.74	25 46 12.2	24.13	5	19 43 10.85	21 35 36.6	
6	18 0 26.51	25 43 47.4	25.47	6	19 45 15.00	21 27 48.2	
7	18 2 44.04	25 41 14.6	26.77	7	19 47 18.87	21 19 54.3	
8	18 5 1.32	25 38 34.0	28.07	8	19 49 22.44	21 11 55.1	
9	18 7 18.35	25 35 45.6	29.37	9	19 51 25.73	21 3 50.5	
10	18 9 35.13	25 32 49.4	30.67	10	19 53 28.73	20 55 40.6	
11	18 11 51.65	25 29 45.4	31.95	11	19 55 31.44	20 47 25.4	
12	18 14 7.91	25 26 33.7	33.22	12	19 57 33.87	20 39 5.1	
13	18 16 23.91	25 23 14.4	34.50	13	19 59 36.02	20 30 39.6	
14	18 18 39.65	25 19 47.4	35.74	14	20 1 37.88	20 22 9.1	
15	18 20 55.13	25 16 13.0	37.00	15	20 3 39.47	20 13 33.5	
16	18 23 10.33	25 12 31.0	38.23	16	20 5 40.78	20 4 52.9	
17	18 25 25.26	25 8 41.6	39.48	17	20 7 41.82	19 56 7.3	
18	18 27 39.92	25 4 44.7	40.70	18	20 9 42.58	19 47 16.9	
19	18 29 54.31	25 0 40.5	41.90	19	20 11 43.07	19 38 21.7	
20	18 32 8.42	24 56 29.1	43.13	20	20 13 43.28	19 29 21.6	
21	18 34 22.25	24 52 10.3	44.32	21	20 15 43.23	19 20 16.9	
22	18 36 35.80	24 47 44.4	45.52	22	20 17 42.92	19 11 7.4	
23	18 38 49.06	S. 24 43 11.3	46.70	23	20 19 42.33	S. 19 1 53.3	
<i>SATURDAY 2.</i>				<i>MONDAY 4.</i>			
	^h ^m ^s	[°] ['] ["]	["]		^h ^m ^s	[°] ['] ["]	
0	18 41 2.04	S. 24 38 31.1	47.87	0	20 21 41.49	S. 18 52 34.6	
1	18 43 14.74	24 33 43.9	49.05	1	20 23 40.39	18 43 11.4	
2	18 45 27.14	24 28 49.6	50.18	2	20 25 39.02	18 33 43.7	
3	18 47 39.26	24 23 48.5	51.25	3	20 27 37.40	18 24 11.5	
4	18 49 51.09	24 18 40.4	52.48	4	20 29 35.53	18 14 35.0	
5	18 52 2.62	24 13 25.5	53.60	5	20 31 33.41	18 4 54.1	
6	18 54 13.87	24 8 3.9	54.73	6	20 33 31.04	17 55 8.9	
7	18 56 24.82	24 2 35.5	55.85	7	20 35 28.42	17 45 19.5	
8	18 58 35.48	23 57 0.4	56.95	8	20 37 25.56	17 35 25.8	
9	19 0 45.84	23 51 18.7	58.05	9	20 39 22.45	17 25 28.1	
10	19 2 55.91	23 45 30.4	59.13	10	20 41 19.11	17 15 26.2	
11	19 5 5.69	23 39 35.6	60.20	11	20 43 15.53	17 5 20.2	
12	19 7 15.16	23 33 34.1	61.28	12	20 45 11.72	16 55 10.3	
13	19 9 24.34	23 27 26.7	62.33	13	20 47 7.68	16 44 56.4	
14	19 11 33.22	23 21 12.7	63.38	14	20 49 3.41	16 34 38.6	
15	19 13 41.81	23 14 52.4	64.42	15	20 50 58.91	16 24 16.9	
16	19 15 50.10	23 8 25.9	65.47	16	20 52 54.19	16 13 51.4	
17	19 17 58.09	23 1 53.1	66.47	17	20 54 49.24	16 3 22.1	
18	19 20 5.78	22 55 14.3	67.50	18	20 56 44.08	15 52 49.0	
19	19 22 13.17	22 48 29.3	68.50	19	20 58 38.71	15 42 12.3	
20	19 24 20.27	22 41 38.3	69.50	20	21 0 33.12	15 31 32.0	
21	19 26 27.08	22 34 41.3	70.48	21	21 2 27.32	15 20 48.0	
22	19 28 33.58	22 27 38.4	71.47	22	21 4 21.32	15 10 0.5	
23	19 30 39.79	22 20 29.6	72.43	23	21 6 15.12	14 59 9.5	
24	19 32 45.70	S. 22 13 15.0		24	21 8 8.71	S. 14 48 15.0	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Day	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
TUESDAY 5.				THURSDAY 7.			
22 3	21 8 8.71	S. 14 48 15.0	109.65	0	22 36 9.76	S. 5 10 43.4	128.72
22 4	21 10 2.11	14 37 17.1	110.22	1	22 37 57.62	4 57 51.1	128.95
21 30	21 11 55.31	14 26 15.8	110.77	2	22 39 45.45	4 44 57.4	129.17
21 30	21 13 48.33	14 15 11.2	111.32	3	22 41 33.26	4 32 2.4	129.38
21 40	21 15 41.15	14 4 3.3	111.85	4	22 43 21.04	4 19 6.1	129.60
21 35	21 17 33.79	13 52 52.2	112.40	5	22 45 8.81	4 6 8.5	129.78
21 5	21 19 26.25	13 41 37.8	112.92	6	22 46 56.56	3 53 9.8	130.00
21 19	21 21 18.54	13 30 20.3	113.43	7	22 48 44.31	3 40 9.8	130.17
21 11	21 23 10.64	13 18 59.7	113.95	8	22 50 32.05	3 27 8.8	130.35
21 31	21 25 2.57	13 7 36.0	114.45	9	22 52 19.78	3 14 6.7	130.53
20 51	21 26 54.34	12 56 9.3	114.95	10	22 54 7.52	3 1 3.5	130.68
20 47	21 28 45.93	12 44 39.6	115.45	11	22 55 55.27	2 47 59.4	130.85
20 39	21 30 37.37	12 33 6.9	115.93	12	22 57 43.02	2 34 54.3	131.00
20 30	21 32 28.65	12 21 31.3	116.40	13	22 59 30.79	2 21 48.3	131.13
20 22	21 34 19.77	12 9 52.9	116.87	14	23 1 18.57	2 8 41.5	131.28
20 13	21 36 10.74	11 58 11.7	117.33	15	23 3 6.37	1 55 33.8	131.42
20 4	21 38 1.56	11 46 27.7	117.80	16	23 4 54.20	1 42 25.3	131.52
19 56 7	21 39 52.23	11 34 40.9	118.23	17	23 6 42.06	1 29 16.2	131.65
19 47	21 41 42.76	11 22 51.5	118.68	18	23 8 29.95	1 16 6.3	131.77
19 38	21 43 33.15	11 10 59.4	119.12	19	23 10 17.87	1 2 55.7	131.85
19 29	21 45 23.41	10 59 4.7	119.55	20	23 12 5.83	0 49 44.6	131.95
19 20	21 47 13.53	10 47 7.4	119.95	21	23 13 53.84	0 36 32.9	132.03
19 11	21 49 3.52	10 35 7.7	120.38	22	23 15 41.89	0 23 20.7	132.12
S. 19 13	21 50 53.39	S. 10 23 5.4	120.78	23	23 17 30.00	S. 0 10 8.0	132.18
WEDNESDAY 6.				FRIDAY 8.			
S. 18 34	0 21 52 43.14	S. 10 11 0.7	121.18	0	23 19 18.15	N. 0 3 5.1	132.25
18 43	1 21 54 32.77	9 58 53.6	121.57	1	23 21 6.37	0 16 18.6	132.32
18 33	2 21 56 22.28	9 46 44.2	121.97	2	23 22 54.64	0 29 32.5	132.35
18 24	3 21 58 11.68	9 34 32.4	122.33	3	23 24 42.98	0 42 46.6	132.40
18 14	4 22 0 0.98	9 22 18.4	122.73	4	23 26 31.39	0 56 1.0	132.44
18 4	5 22 1 50.17	9 10 2.1	123.07	5	23 28 19.88	1 9 15.6	132.45
17 55	6 22 3 39.26	8 57 43.7	123.45	6	23 30 8.44	1 22 30.3	132.48
17 45	7 22 5 28.25	8 45 23.0	123.78	7	23 31 57.08	1 35 45.2	132.48
17 35	8 22 7 17.15	8 33 0.3	124.12	8	23 33 45.80	1 49 0.1	132.48
17 25	9 22 9 5.96	8 20 35.6	124.48	9	23 35 34.62	2 2 15.0	132.48
17 15	10 22 10 54.68	8 8 8.7	124.80	10	23 37 23.52	2 15 29.9	132.47
17 5	11 22 12 43.32	7 55 39.9	125.12	11	23 39 12.52	2 28 44.7	132.45
16 55	12 22 14 31.88	7 43 9.2	125.43	12	23 41 1.62	2 41 59.4	132.42
16 45	13 22 16 20.37	7 30 36.6	125.77	13	23 42 50.82	2 55 13.9	132.37
16 35	14 22 18 8.78	7 18 2.0	126.05	14	23 44 40.14	3 8 28.1	132.33
16 25	15 22 19 57.13	7 5 25.7	126.35	15	23 46 29.56	3 21 42.1	132.28
16 15	16 22 21 45.41	6 52 47.6	126.65	16	23 48 19.10	3 34 55.8	132.20
16 5	17 22 23 33.63	6 40 7.7	126.92	17	23 50 8.75	3 48 9.0	132.15
15 55	18 22 25 21.79	6 27 26.2	127.20	18	23 51 58.53	4 1 21.9	132.07
15 45	19 22 27 9.90	6 14 43.0	127.48	19	23 53 48.43	4 14 34.3	131.97
15 35	20 22 28 57.96	6 1 58.1	127.73	20	23 55 38.47	4 27 46.1	131.88
15 25	21 22 30 45.97	5 49 11.7	128.00	21	23 57 28.63	4 40 57.4	131.78
15 15	22 22 32 33.94	5 36 23.7	128.23	22	23 59 18.93	4 54 8.1	131.65
15 5	23 22 34 21.87	5 23 34.3	128.48	23	0 1 9.37	5 7 18.0	131.55

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Hour.	Right Ascension.	Declination.
<i>SATURDAY 9.</i>				<i>MONDAY 11.</i>					
0	2 59 '96	N. 5 20 27 '3	181 '42	0	1 35 27 '71	N.15 19 28 '2	0	2 25 42 '89	N.19 33 14 '3
1	0 4 50 '70	5 33 35 '8	181 '37	1	1 37 29 '63	15 30 51 '7	1	2 27 52 '73	19 42 48 '0
2	0 6 41 '58	5 46 43 '4	181 '13	2	1 39 31 '86	15 42 11 '5	2	2 30 2 '91	19 52 16 '2
3	0 8 32 '62	5 59 50 '2	180 '37	3	1 41 34 '40	15 53 27 '5	3	2 32 13 '43	20 1 38 '9
4	0 10 23 '82	6 12 56 '0	180 '32	4	1 43 37 '25	16 4 39 '6	4	2 34 24 '31	20 10 55 '9
5	0 12 15 '19	6 26 0 '9	180 '63	5	1 45 40 '41	16 15 47 '7	5	2 36 35 '53	20 20 7 '2
6	0 14 6 '72	6 39 4 '7	180 '45	6	1 47 43 '90	16 26 51 '8	6	2 38 47 '10	20 29 12 '7
7	0 15 58 '41	6 52 7 '4	180 '27	7	1 49 47 '70	16 37 51 '8	7	2 40 59 '02	20 38 12 '3
8	0 17 50 '29	7 5 9 '0	180 '07	8	1 51 51 '82	16 48 47 '6	8	2 43 11 '28	20 47 6 '0
9	0 19 42 '34	7 18 9 '4	129 '85	9	1 53 56 '27	16 59 39 '2	9	2 45 23 '90	20 55 53 '6
10	0 21 34 '57	7 31 8 '5	129 '62	10	1 56 1 '04	17 10 26 '5	10	2 47 36 '86	21 4 35 '2
11	0 23 26 '99	7 44 6 '3	129 '42	11	1 58 6 '14	17 21 9 '4	11	2 49 50 '17	21 13 10 '6
12	0 25 19 '59	7 57 2 '8	129 '18	12	2 0 11 '56	17 31 47 '8	12	2 52 3 '82	21 21 39 '8
13	0 27 12 '39	8 9 57 '9	128 '98	13	2 2 17 '32	17 42 21 '7	13	2 54 17 '83	21 30 2 '7
14	0 29 5 '38	8 22 51 '5	128 '68	14	2 4 23 '41	17 52 51 '0	14	2 56 32 '17	21 38 19 '2
15	0 30 58 '57	8 35 43 '6	128 '42	15	2 6 29 '83	18 3 15 '6	15	2 58 46 '87	21 46 29 '2
16	0 32 51 '96	8 48 34 '1	128 '13	16	2 8 36 '59	18 13 35 '5	16	3 1 '91	21 54 32 '7
17	0 34 45 '56	9 1 22 '9	127 '85	17	2 10 43 '68	18 23 50 '5	17	3 3 17 '29	22 2 29 '6
18	0 36 39 '37	9 14 10 '0	127 '57	18	2 12 51 '12	18 34 0 '6	18	3 5 33 '02	22 10 19 '8
19	0 38 33 '39	9 26 55 '4	127 '27	19	2 14 58 '89	18 44 5 '8	19	3 7 49 '09	22 18 3 '2
20	0 40 27 '63	9 39 39 '0	126 '98	20	2 17 7 '00	18 54 5 '9	20	3 10 5 '49	22 25 39 '9
21	0 42 22 '09	9 52 20 '6	126 '62	21	2 19 15 '46	19 4 0 '8	21	3 12 22 '24	22 33 9 '6
22	0 44 16 '77	10 5 0 '4	126 '28	22	2 21 24 '26	19 13 50 '6	22	3 14 39 '32	22 40 32 '4
23	0 46 11 '68	N.10 17 38 '1	125 '98	23	2 23 33 '40	N.19 23 35 '1	23	3 16 56 '74	22 47 48 '1
<i>SUNDAY 10.</i>				<i>TUESDAY 12.</i>					
0	0 48 6 '82	N.10 30 13 '8	125 '58	0	2 25 42 '89	N.19 33 14 '3	0	3 19 14 '49	N.22 54 56 '7
1	0 50 2 '19	10 42 47 '3	125 '23	1	2 27 52 '73	19 42 48 '0	1		
2	0 51 57 '80	10 55 18 '7	124 '85	2	2 30 2 '91	19 52 16 '2	2		
3	0 53 53 '65	11 7 47 '8	124 '47	3	2 32 13 '43	20 1 38 '9	3		
4	0 55 49 '75	11 20 14 '6	124 '07	4	2 34 24 '31	20 10 55 '9	4		
5	0 57 46 '09	11 32 39 '0	123 '67	5	2 36 35 '53	20 20 7 '2	5		
6	0 59 42 '69	11 45 1 '0	123 '25	6	2 38 47 '10	20 29 12 '7	6		
7	1 1 39 '53	11 57 20 '5	122 '83	7	2 40 59 '02	20 38 12 '3	7		
8	1 3 36 '64	12 9 37 '5	122 '38	8	2 43 11 '28	20 47 6 '0	8		
9	1 5 34 '00	12 21 51 '8	121 '93	9	2 45 23 '90	20 55 53 '6	9		
10	1 7 31 '62	12 34 3 '4	121 '48	10	2 47 36 '86	21 4 35 '2	10		
11	1 9 29 '52	12 46 12 '3	121 '02	11	2 49 50 '17	21 13 10 '6	11		
12	1 11 27 '68	12 58 18 '4	120 '53	12	2 52 3 '82	21 21 39 '8	12		
13	1 13 26 '12	13 10 21 '6	120 '05	13	2 54 17 '83	21 30 2 '7	13		
14	1 15 24 '83	13 22 21 '9	119 '53	14	2 56 32 '17	21 38 19 '2	14		
15	1 17 23 '82	13 34 19 '1	119 '03	15	2 58 46 '87	21 46 29 '2	15		
16	1 19 23 '09	13 46 13 '3	118 '52	16	3 1 '91	21 54 32 '7	16		
17	1 21 22 '64	13 58 4 '4	117 '97	17	3 3 17 '29	22 2 29 '6	17		
18	1 23 22 '48	14 9 52 '2	117 '43	18	3 5 33 '02	22 10 19 '8	18		
19	1 25 22 '62	14 21 36 '8	116 '87	19	3 7 49 '09	22 18 3 '2	19		
20	1 27 23 '04	14 33 18 '0	116 '30	20	3 10 5 '49	22 25 39 '9	20		
21	1 29 23 '76	14 44 55 '8	115 '73	21	3 12 22 '24	22 33 9 '6	21		
22	1 31 24 '78	14 56 30 '2	115 '13	22	3 14 39 '32	22 40 32 '4	22		
23	1 33 26 '09	15 8 1 '0	114 '53	23	3 16 56 '74	22 47 48 '1	23		
24	1 35 27 '71	N.15 19 28 '2		24			24		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Right Ascension.			Declination.			Diff. Dec. for 10 ^m .	Hour.	Right Ascension.			Declination.			Diff. Dec. for 10 ^m .	
WEDNESDAY 13.								FRIDAY 15.							
<i>h</i>	<i>m</i>	<i>s</i>	<i>°</i>	<i>'</i>	<i>"</i>	<i>"</i>		<i>h</i>	<i>m</i>	<i>s</i>	<i>°</i>	<i>'</i>	<i>"</i>	<i>"</i>	
3	19	14	22	54	56	70	0	5	14	53	25	57	54	1	
3	21	32	23	1	58	69	1	5	17	23	25	58	2	0	
3	23	50	23	8	52	67	2	5	19	52	25	58	0	7	
3	26	9	23	15	39	66	3	5	22	22	25	57	49	5	
3	28	28	23	22	18	65	4	5	24	52	25	57	28	5	
3	30	48	23	28	50	64	5	5	27	22	25	56	58	0	
3	33	7	23	35	15	62	6	5	29	52	25	56	17	7	
3	35	27	23	41	31	61	7	5	32	21	25	55	27	8	
3	37	48	23	47	41	60	8	5	34	51	25	54	28	2	
3	40	8	23	53	42	58	9	5	37	22	25	53	18	8	
3	42	29	23	59	36	57	10	5	39	52	25	51	59	8	
3	44	51	24	5	21	56	11	5	42	22	25	50	31	0	
3	47	12	24	10	59	54	12	5	44	52	25	48	52	5	
3	49	34	24	16	29	53	13	5	47	22	25	47	4	3	
3	51	56	24	21	51	52	14	5	49	52	25	45	6	3	
3	54	19	24	27	5	50	15	5	52	23	25	42	58	6	
3	56	42	24	32	10	49	16	5	54	53	25	40	41	1	
3	59	5	24	37	8	48	17	5	57	23	25	38	14	0	
4	1	28	24	41	57	46	18	5	59	53	25	35	37	1	
4	3	51	24	46	37	45	19	6	2	24	25	32	50	6	
4	6	15	24	51	10	43	20	6	4	54	25	29	54	3	
4	8	39	24	55	33	42	21	6	7	24	25	26	48	3	
4	11	4	24	59	49	41	22	6	9	54	25	23	32	7	
4	13	29	N.25	3	55	39	23	6	12	24	N.25	20	7	4	
THURSDAY 14.								SATURDAY 16.							
<i>h</i>	<i>m</i>	<i>s</i>	<i>°</i>	<i>'</i>	<i>"</i>	<i>"</i>		<i>h</i>	<i>m</i>	<i>s</i>	<i>°</i>	<i>'</i>	<i>"</i>	<i>"</i>	
4	15	53	N.25	7	53	38	0	6	14	54	N.25	16	32	4	
4	18	19	25	11	43	36	1	6	17	24	25	12	47	8	
4	20	44	25	15	23	35	2	6	19	54	25	8	53	6	
4	23	10	25	18	55	33	3	6	22	24	25	4	49	8	
4	25	36	25	22	18	32	4	6	24	54	25	0	36	4	
4	28	2	25	25	32	30	5	6	27	23	24	56	13	5	
4	30	28	25	28	37	29	6	6	29	53	24	51	41	1	
4	32	54	25	31	33	27	7	6	32	23	24	46	59	1	
4	35	21	25	34	21	26	8	6	34	52	24	42	7	7	
4	37	48	25	36	59	24	9	6	37	21	24	37	6	8	
4	40	15	25	39	27	23	10	6	39	51	24	31	56	5	
4	42	43	25	41	47	21	11	6	42	20	24	26	36	9	
4	45	10	25	43	58	20	12	6	44	49	24	21	7	8	
4	47	38	25	45	59	18	13	6	47	18	24	15	29	4	
4	50	6	25	47	51	17	14	6	49	47	24	9	41	8	
4	52	34	25	49	34	15	15	6	52	15	24	3	44	9	
4	55	2	25	51	7	13	16	6	54	44	23	57	38	8	
4	57	31	25	52	31	12	17	6	57	12	23	51	23	6	
4	59	59	25	53	46	10	18	6	59	40	23	44	59	2	
5	2	28	25	54	51	9	19	7	2	8	23	38	25	7	
5	4	57	25	55	46	9	20	7	4	36	23	31	43	2	
5	7	26	25	56	33	6	21	7	7	4	23	24	51	6	
5	9	55	25	57	9	4	22	7	9	32	23	17	51	1	
5	12	24	25	57	36	2	23	7	11	59	23	10	41	7	
5	14	53	N.25	5	54	0	24	7	14	26	N.25	2	22	5	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
SATURDAY 9.				MONDAY 11.			
0	0 2 59 ^s 96 ^m	N. 5 20 27 ^s 3 ^m	181 ^s 42 ^m	0	1 35 27 ^s 71 ^m	N. 15 19 28 ^s 2 ^m	113 ^s 92 ^m
1	0 4 50 ^s 70 ^m	5 33 35 ^s 8 ^m	181 ^s 27 ^m	1	1 37 29 ^s 63 ^m	15 30 51 ^s 7 ^m	113 ^s 30 ^m
2	0 6 41 ^s 58 ^m	5 46 43 ^s 4 ^m	181 ^s 13 ^m	2	1 39 31 ^s 86 ^m	15 42 11 ^s 5 ^m	112 ^s 67 ^m
3	0 8 32 ^s 62 ^m	5 59 50 ^s 2 ^m	180 ^s 97 ^m	3	1 41 34 ^s 40 ^m	15 53 27 ^s 5 ^m	112 ^s 02 ^m
4	0 10 23 ^s 82 ^m	6 12 56 ^s 0 ^m	180 ^s 82 ^m	4	1 43 37 ^s 25 ^m	16 4 39 ^s 6 ^m	111 ^s 25 ^m
5	0 12 15 ^s 19 ^m	6 26 0 ^s 9 ^m	180 ^s 63 ^m	5	1 45 40 ^s 41 ^m	16 15 47 ^s 7 ^m	110 ^s 68 ^m
6	0 14 6 ^s 72 ^m	6 39 4 ^s 7 ^m	180 ^s 45 ^m	6	1 47 43 ^s 90 ^m	16 26 51 ^s 8 ^m	110 ^s 00 ^m
7	0 15 58 ^s 41 ^m	6 52 7 ^s 4 ^m	180 ^s 27 ^m	7	1 49 47 ^s 70 ^m	16 37 51 ^s 8 ^m	109 ^s 30 ^m
8	0 17 50 ^s 29 ^m	7 5 9 ^s 0 ^m	180 ^s 07 ^m	8	1 51 51 ^s 82 ^m	16 48 47 ^s 6 ^m	108 ^s 60 ^m
9	0 19 42 ^s 34 ^m	7 18 9 ^s 4 ^m	129 ^s 85 ^m	9	1 53 56 ^s 27 ^m	16 59 39 ^s 2 ^m	107 ^s 88 ^m
10	0 21 34 ^s 57 ^m	7 31 8 ^s 5 ^m	129 ^s 68 ^m	10	1 56 1 ^s 04 ^m	17 10 26 ^s 5 ^m	107 ^s 15 ^m
11	0 23 26 ^s 99 ^m	7 44 6 ^s 3 ^m	129 ^s 42 ^m	11	1 58 6 ^s 14 ^m	17 21 9 ^s 4 ^m	106 ^s 40 ^m
12	0 25 19 ^s 59 ^m	7 57 2 ^s 8 ^m	129 ^s 18 ^m	12	2 0 11 ^s 56 ^m	17 31 47 ^s 8 ^m	105 ^s 65 ^m
13	0 27 12 ^s 39 ^m	8 9 57 ^s 9 ^m	128 ^s 93 ^m	13	2 2 17 ^s 32 ^m	17 42 21 ^s 7 ^m	104 ^s 98 ^m
14	0 29 5 ^s 38 ^m	8 22 51 ^s 5 ^m	128 ^s 68 ^m	14	2 4 23 ^s 41 ^m	17 52 51 ^s 0 ^m	104 ^s 10 ^m
15	0 30 58 ^s 57 ^m	8 35 43 ^s 6 ^m	128 ^s 42 ^m	15	2 6 29 ^s 83 ^m	18 3 15 ^s 6 ^m	103 ^s 32 ^m
16	0 32 51 ^s 96 ^m	8 48 34 ^s 1 ^m	128 ^s 13 ^m	16	2 8 36 ^s 59 ^m	18 13 35 ^s 5 ^m	102 ^s 50 ^m
17	0 34 45 ^s 36 ^m	9 1 22 ^s 9 ^m	127 ^s 85 ^m	17	2 10 43 ^s 68 ^m	18 23 50 ^s 5 ^m	101 ^s 68 ^m
18	0 36 39 ^s 37 ^m	9 14 10 ^s 0 ^m	127 ^s 57 ^m	18	2 12 51 ^s 12 ^m	18 34 0 ^s 6 ^m	100 ^s 37 ^m
19	0 38 33 ^s 39 ^m	9 26 55 ^s 4 ^m	127 ^s 27 ^m	19	2 14 58 ^s 89 ^m	18 44 5 ^s 8 ^m	100 ^s 02 ^m
20	0 40 27 ^s 63 ^m	9 39 39 ^s 0 ^m	126 ^s 93 ^m	20	2 17 7 ^s 00 ^m	18 54 5 ^s 9 ^m	99 ^s 15 ^m
21	0 42 22 ^s 09 ^m	9 52 20 ^s 6 ^m	126 ^s 62 ^m	21	2 19 15 ^s 46 ^m	19 4 0 ^s 8 ^m	98 ^s 30 ^m
22	0 44 16 ^s 77 ^m	10 5 0 ^s 4 ^m	126 ^s 28 ^m	22	2 21 24 ^s 26 ^m	19 13 50 ^s 6 ^m	97 ^s 42 ^m
23	0 46 11 ^s 68 ^m	N. 10 17 38 ^s 1 ^m	125 ^s 95 ^m	23	2 23 33 ^s 40 ^m	N. 19 23 35 ^s 1 ^m	96 ^s 53 ^m
SUNDAY 10.				TUESDAY 12.			
0	0 48 6 ^s 82 ^m	N. 10 30 13 ^s 8 ^m	125 ^s 58 ^m	0	2 25 42 ^s 89 ^m	N. 19 33 14 ^s 3 ^m	95 ^s 62 ^m
1	0 50 2 ^s 19 ^m	10 42 47 ^s 3 ^m	125 ^s 23 ^m	1	2 27 52 ^s 73 ^m	19 42 48 ^s 0 ^m	94 ^s 70 ^m
2	0 51 57 ^s 80 ^m	10 55 18 ^s 7 ^m	124 ^s 85 ^m	2	2 30 2 ^s 91 ^m	19 52 16 ^s 2 ^m	93 ^s 78 ^m
3	0 53 53 ^s 65 ^m	11 7 47 ^s 8 ^m	124 ^s 47 ^m	3	2 32 13 ^s 43 ^m	20 1 38 ^s 9 ^m	92 ^s 83 ^m
4	0 55 49 ^s 75 ^m	11 20 14 ^s 6 ^m	124 ^s 07 ^m	4	2 34 24 ^s 31 ^m	20 10 55 ^s 9 ^m	91 ^s 88 ^m
5	0 57 46 ^s 09 ^m	11 32 39 ^s 0 ^m	123 ^s 67 ^m	5	2 36 35 ^s 53 ^m	20 20 7 ^s 2 ^m	90 ^s 92 ^m
6	0 59 42 ^s 69 ^m	11 45 1 ^s 0 ^m	123 ^s 25 ^m	6	2 38 47 ^s 10 ^m	20 29 12 ^s 7 ^m	89 ^s 98 ^m
7	1 1 39 ^s 53 ^m	11 57 20 ^s 5 ^m	122 ^s 83 ^m	7	2 40 59 ^s 02 ^m	20 38 12 ^s 3 ^m	88 ^s 95 ^m
8	1 3 36 ^s 64 ^m	12 9 37 ^s 5 ^m	122 ^s 28 ^m	8	2 43 11 ^s 28 ^m	20 47 6 ^s 0 ^m	87 ^s 93 ^m
9	1 5 34 ^s 00 ^m	12 21 51 ^s 8 ^m	121 ^s 98 ^m	9	2 45 23 ^s 90 ^m	20 55 53 ^s 6 ^m	86 ^s 93 ^m
10	1 7 31 ^s 62 ^m	12 34 3 ^s 4 ^m	121 ^s 48 ^m	10	2 47 36 ^s 86 ^m	21 4 35 ^s 2 ^m	85 ^s 90 ^m
11	1 9 29 ^s 52 ^m	12 46 12 ^s 3 ^m	121 ^s 02 ^m	11	2 49 50 ^s 17 ^m	21 13 10 ^s 6 ^m	84 ^s 87 ^m
12	1 11 27 ^s 68 ^m	12 58 18 ^s 4 ^m	120 ^s 52 ^m	12	2 52 3 ^s 82 ^m	21 21 39 ^s 8 ^m	83 ^s 82 ^m
13	1 13 26 ^s 12 ^m	13 10 21 ^s 6 ^m	120 ^s 05 ^m	13	2 54 17 ^s 83 ^m	21 30 2 ^s 7 ^m	82 ^s 75 ^m
14	1 15 24 ^s 83 ^m	13 22 21 ^s 9 ^m	119 ^s 53 ^m	14	2 56 32 ^s 17 ^m	21 38 19 ^s 2 ^m	81 ^s 67 ^m
15	1 17 23 ^s 82 ^m	13 34 19 ^s 1 ^m	119 ^s 03 ^m	15	2 58 46 ^s 87 ^m	21 46 29 ^s 2 ^m	80 ^s 58 ^m
16	1 19 23 ^s 09 ^m	13 46 13 ^s 3 ^m	118 ^s 52 ^m	16	3 1 1 ^s 91 ^m	21 54 32 ^s 7 ^m	79 ^s 48 ^m
17	1 21 22 ^s 64 ^m	13 58 4 ^s 4 ^m	117 ^s 97 ^m	17	3 3 17 ^s 29 ^m	22 2 29 ^s 6 ^m	78 ^s 37 ^m
18	1 23 22 ^s 48 ^m	14 9 52 ^s 2 ^m	117 ^s 43 ^m	18	3 5 33 ^s 02 ^m	22 10 19 ^s 8 ^m	77 ^s 23 ^m
19	1 25 22 ^s 62 ^m	14 21 36 ^s 8 ^m	116 ^s 87 ^m	19	3 7 49 ^s 09 ^m	22 18 3 ^s 2 ^m	76 ^s 12 ^m
20	1 27 23 ^s 04 ^m	14 33 18 ^s 0 ^m	116 ^s 30 ^m	20	3 10 5 ^s 49 ^m	22 25 39 ^s 9 ^m	74 ^s 95 ^m
21	1 29 23 ^s 76 ^m	14 44 55 ^s 8 ^m	115 ^s 73 ^m	21	3 12 22 ^s 24 ^m	22 33 9 ^s 6 ^m	73 ^s 80 ^m
22	1 31 24 ^s 78 ^m	14 56 30 ^s 2 ^m	115 ^s 13 ^m	22	3 14 39 ^s 32 ^m	22 40 32 ^s 4 ^m	72 ^s 62 ^m
23	1 33 26 ^s 09 ^m	15 8 1 ^s 0 ^m	114 ^s 53 ^m	23	3 16 56 ^s 74 ^m	22 47 48 ^s 1 ^m	71 ^s 43 ^m
24	1 35 27 ^s 71 ^m	N. 15 19 28 ^s 2 ^m		24	3 19 14 ^s 49 ^m	N. 22 54 56 ^s 7 ^m	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>WEDNESDAY 13.</i>				<i>FRIDAY 15.</i>			
0	3 19 14.49	N.22 54 56.7	70.23	0	5 14 53.99	N.25 57 54.4	1.33
1	3 21 32.57	23 1 58.1	69.03	1	5 17 23.44	25 58 2.4	0.28
2	3 23 50.99	23 8 52.3	67.80	2	5 19 52.98	25 58 0.7	1.87
3	3 26 9.73	23 15 39.1	66.57	3	5 22 22.62	25 57 49.5	3.50
4	3 28 28.79	23 22 18.5	65.23	4	5 24 52.35	25 57 28.5	5.08
5	3 30 48.19	23 28 50.5	64.08	5	5 27 22.15	25 56 58.0	6.72
6	3 33 7.90	23 35 15.0	62.90	6	5 29 52.03	25 56 17.7	8.32
7	3 35 27.92	23 41 31.8	61.53	7	5 32 21.97	25 55 27.8	9.93
8	3 37 48.27	23 47 41.0	60.23	8	5 34 51.97	25 54 28.2	11.57
9	3 40 8.93	23 53 42.4	58.95	9	5 37 22.02	25 53 18.8	13.17
10	3 42 29.89	23 59 36.1	57.68	10	5 39 52.13	25 51 59.8	14.80
11	3 44 51.16	24 5 21.9	56.32	11	5 42 22.27	25 50 31.0	16.42
12	3 47 12.74	24 10 59.8	54.98	12	5 44 52.44	25 48 52.5	18.03
13	3 49 34.62	24 16 29.7	53.65	13	5 47 22.64	25 47 4.3	19.67
14	3 51 56.79	24 21 51.6	52.28	14	5 49 52.87	25 45 6.3	21.28
15	3 54 19.26	24 27 5.3	50.93	15	5 52 23.10	25 42 58.6	22.92
16	3 56 42.01	24 32 10.9	49.55	16	5 54 53.34	25 40 41.1	24.52
17	3 59 5.05	24 37 8.2	48.17	17	5 57 23.58	25 38 14.0	26.15
18	4 1 28.37	24 41 57.2	46.78	18	5 59 53.81	25 35 37.1	27.75
19	4 3 51.97	24 46 37.9	45.37	19	6 2 24.02	25 32 50.6	29.38
20	4 6 15.84	24 51 10.1	43.97	20	6 4 54.22	25 29 54.3	31.00
21	4 8 39.97	24 55 33.9	42.55	21	6 7 24.39	25 26 48.3	32.60
22	4 11 4.37	24 59 49.2	41.12	22	6 9 54.52	25 23 32.7	34.22
23	4 13 29.03	N.25 3 55.9	39.67	23	6 12 24.61	N.25 20 7.4	35.83
<i>THURSDAY 14.</i>				<i>SATURDAY 16.</i>			
0	4 15 53.94	N.25 7 53.9	38.22	0	6 14 54.66	N.25 16 32.4	37.43
1	4 18 19.10	25 11 43.2	36.77	1	6 17 24.65	25 12 47.8	39.03
2	4 20 44.50	25 15 23.8	35.30	2	6 19 54.59	25 8 53.6	40.63
3	4 23 10.14	25 18 55.6	33.83	3	6 22 24.45	25 4 49.8	42.23
4	4 25 36.01	25 22 18.6	32.33	4	6 24 54.25	25 0 36.4	43.82
5	4 28 2.12	25 25 32.6	30.87	5	6 27 23.97	24 56 13.5	45.40
6	4 30 28.44	25 28 37.8	29.35	6	6 29 53.61	24 51 41.1	47.00
7	4 32 54.99	25 31 33.9	27.85	7	6 32 23.16	24 46 59.1	48.57
8	4 35 21.73	25 34 21.0	26.33	8	6 34 52.61	24 42 7.7	50.15
9	4 37 48.72	25 36 59.0	24.82	9	6 37 21.97	24 37 6.8	51.72
0	4 40 15.88	25 39 27.9	23.30	10	6 39 51.22	24 31 56.5	53.27
1	4 42 43.25	25 41 47.7	21.75	11	6 42 20.36	24 26 36.9	54.85
2	4 45 10.80	25 43 58.2	20.23	12	6 44 49.38	24 21 7.8	56.40
3	4 47 38.54	25 45 59.5	18.67	13	6 47 18.28	24 15 29.4	57.93
4	4 50 6.46	25 47 51.5	17.12	14	6 49 47.06	24 9 41.8	59.48
5	4 52 34.54	25 49 34.2	15.57	15	6 52 15.71	24 3 44.9	61.02
6	4 55 2.80	25 51 7.6	13.98	16	6 54 44.23	23 57 38.8	62.53
7	4 57 31.21	25 52 31.5	12.43	17	6 57 12.60	23 51 23.6	64.07
8	4 59 59.77	25 53 46.1	10.87	18	6 59 40.82	23 44 59.2	65.58
9	5 2 28.48	25 54 51.3	9.27	19	7 2 8.90	23 38 25.7	67.08
0	5 4 57.33	25 55 46.9	7.70	20	7 4 36.83	23 31 43.2	68.60
1	5 7 26.31	25 56 33.1	6.10	21	7 7 4.60	23 24 51.6	70.08
2	5 9 55.42	25 57 9.7	4.53	22	7 9 32.20	23 17 51.1	71.57
3	5 12 24.65	25 57 36.9	2.92	23	7 11 59.64	23 10 41.7	73.03
4	5 14 53.99	N.25 57 54.4		24	7 14 26.91	N.23 3 23.5	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>SUNDAY 17.</i>				<i>TUESDAY 19.</i>			
0	^h 7 ^m 14 ^s 26 [·] 91	N. 23 3 23 [·] 5	74 [·] 52	0	^h 9 ^m 8 ^s 13 [·] 67	N. 14 39 6 [·] 0	132 [·] 25
1	7 16 54 [·] 00	22 55 56 [·] 4	75 [·] 97	1	9 10 30 [·] 63	14 25 52 [·] 5	133 [·] 05
2	7 19 20 [·] 91	22 48 20 [·] 6	77 [·] 42	2	9 12 47 [·] 39	14 12 33 [·] 6	134 [·] 03
3	7 21 47 [·] 65	22 40 36 [·] 1	78 [·] 87	3	9 15 3 [·] 95	13 59 9 [·] 4	134 [·] 88
4	7 24 14 [·] 20	22 32 42 [·] 9	80 [·] 30	4	9 17 20 [·] 32	13 45 40 [·] 1	135 [·] 73
5	7 26 40 [·] 56	22 24 41 [·] 1	81 [·] 73	5	9 19 36 [·] 50	13 32 5 [·] 7	136 [·] 57
6	7 29 6 [·] 73	22 16 30 [·] 7	83 [·] 13	6	9 21 52 [·] 49	13 18 26 [·] 3	137 [·] 40
7	7 31 32 [·] 71	22 8 11 [·] 9	84 [·] 53	7	9 24 8 [·] 29	13 4 41 [·] 9	138 [·] 18
8	7 33 58 [·] 49	21 59 44 [·] 7	85 [·] 93	8	9 26 23 [·] 91	12 50 52 [·] 8	138 [·] 98
9	7 36 24 [·] 08	21 51 9 [·] 1	87 [·] 33	9	9 28 39 [·] 35	12 36 58 [·] 9	139 [·] 77
10	7 38 49 [·] 46	21 42 25 [·] 1	88 [·] 68	10	9 30 54 [·] 60	12 23 0 [·] 3	140 [·] 53
11	7 41 14 [·] 65	21 33 33 [·] 0	90 [·] 07	11	9 33 9 [·] 68	12 8 57 [·] 1	141 [·] 27
12	7 43 39 [·] 62	21 24 32 [·] 6	91 [·] 42	12	9 35 24 [·] 59	11 54 49 [·] 5	142 [·] 00
13	7 46 4 [·] 39	21 15 24 [·] 1	92 [·] 75	13	9 37 39 [·] 33	11 40 37 [·] 5	142 [·] 72
14	7 48 28 [·] 95	21 6 7 [·] 6	94 [·] 10	14	9 39 53 [·] 90	11 26 21 [·] 2	143 [·] 42
15	7 50 53 [·] 30	20 56 43 [·] 0	95 [·] 40	15	9 42 8 [·] 31	11 12 0 [·] 7	144 [·] 12
16	7 53 17 [·] 44	20 47 10 [·] 6	96 [·] 73	16	9 44 22 [·] 55	10 57 36 [·] 0	144 [·] 78
17	7 55 41 [·] 37	20 37 30 [·] 2	98 [·] 02	17	9 46 36 [·] 64	10 43 7 [·] 3	145 [·] 43
18	7 58 5 [·] 07	20 27 42 [·] 1	99 [·] 32	18	9 48 50 [·] 58	10 28 34 [·] 7	146 [·] 08
19	8 0 28 [·] 56	20 17 46 [·] 2	100 [·] 60	19	9 51 4 [·] 36	10 13 58 [·] 2	146 [·] 72
20	8 2 51 [·] 83	20 7 42 [·] 6	101 [·] 85	20	9 53 18 [·] 00	9 59 17 [·] 9	147 [·] 33
21	8 5 14 [·] 89	19 57 31 [·] 5	103 [·] 12	21	9 55 31 [·] 49	9 44 33 [·] 9	147 [·] 93
22	8 7 37 [·] 72	19 47 12 [·] 8	104 [·] 37	22	9 57 44 [·] 85	9 29 46 [·] 3	148 [·] 52
23	8 10 0 [·] 33	N. 19 36 46 [·] 6	105 [·] 58	23	9 59 58 [·] 06	N. 9 14 55 [·] 2	149 [·] 08
<i>MONDAY 18.</i>				<i>WEDNESDAY 20.</i>			
0	8 12 22 [·] 71	N. 19 26 13 [·] 1	106 [·] 82	0	10 2 11 [·] 14	N. 9 0 0 [·] 7	149 [·] 65
1	8 14 44 [·] 87	19 15 32 [·] 2	108 [·] 02	1	10 4 24 [·] 09	8 45 2 [·] 8	150 [·] 17
2	8 17 6 [·] 81	19 4 44 [·] 1	109 [·] 22	2	10 6 36 [·] 91	8 30 1 [·] 8	150 [·] 72
3	8 19 28 [·] 52	18 53 48 [·] 8	110 [·] 38	3	10 8 49 [·] 61	8 14 57 [·] 5	151 [·] 22
4	8 21 50 [·] 01	18 42 46 [·] 5	111 [·] 57	4	10 11 2 [·] 19	7 59 50 [·] 2	151 [·] 70
5	8 24 11 [·] 28	18 31 37 [·] 1	112 [·] 73	5	10 13 14 [·] 65	7 44 40 [·] 0	152 [·] 18
6	8 26 32 [·] 32	18 20 20 [·] 7	113 [·] 87	6	10 15 27 [·] 00	7 29 26 [·] 9	152 [·] 65
7	8 28 53 [·] 14	18 8 57 [·] 5	115 [·] 02	7	10 17 39 [·] 25	7 14 11 [·] 0	153 [·] 10
8	8 31 13 [·] 74	17 57 27 [·] 4	116 [·] 12	8	10 19 51 [·] 39	6 58 52 [·] 4	153 [·] 52
9	8 33 34 [·] 11	17 45 50 [·] 7	117 [·] 23	9	10 22 3 [·] 43	6 43 31 [·] 3	153 [·] 95
10	8 35 54 [·] 27	17 34 7 [·] 3	118 [·] 33	10	10 24 15 [·] 38	6 28 7 [·] 6	154 [·] 33
11	8 38 14 [·] 20	17 22 17 [·] 3	119 [·] 42	11	10 26 27 [·] 23	6 12 41 [·] 6	154 [·] 73
12	8 40 33 [·] 91	17 10 20 [·] 8	120 [·] 48	12	10 28 39 [·] 00	5 57 13 [·] 2	155 [·] 10
13	8 42 53 [·] 40	16 58 17 [·] 9	121 [·] 53	13	10 30 50 [·] 68	5 41 42 [·] 6	155 [·] 43
14	8 45 12 [·] 68	16 46 8 [·] 7	122 [·] 57	14	10 33 2 [·] 29	5 26 10 [·] 0	155 [·] 78
15	8 47 31 [·] 73	16 33 53 [·] 3	123 [·] 62	15	10 35 13 [·] 82	5 10 35 [·] 3	156 [·] 12
16	8 49 50 [·] 57	16 21 31 [·] 6	124 [·] 62	16	10 37 25 [·] 28	4 54 58 [·] 6	156 [·] 42
17	8 52 9 [·] 20	16 9 3 [·] 9	125 [·] 63	17	10 39 36 [·] 67	4 39 20 [·] 1	156 [·] 70
18	8 54 27 [·] 61	15 56 30 [·] 1	126 [·] 60	18	10 41 48 [·] 00	4 23 39 [·] 9	156 [·] 97
19	8 56 45 [·] 81	15 43 50 [·] 5	127 [·] 58	19	10 43 59 [·] 26	4 7 58 [·] 1	157 [·] 25
20	8 59 3 [·] 79	15 31 5 [·] 0	128 [·] 55	20	10 46 10 [·] 48	3 52 14 [·] 6	157 [·] 48
21	9 1 21 [·] 57	15 18 13 [·] 7	129 [·] 50	21	10 48 21 [·] 64	3 36 29 [·] 7	157 [·] 70
22	9 3 39 [·] 14	15 5 16 [·] 7	130 [·] 43	22	10 50 32 [·] 75	3 20 43 [·] 5	157 [·] 98
23	9 5 56 [·] 51	14 52 14 [·] 1	131 [·] 35	23	10 52 43 [·] 82	3 4 55 [·] 9	158 [·] 12
24	9 8 13 [·] 67	N. 14 39 6 [·] 0		24	10 54 54 [·] 86	N. 2 49 7 [·] 2	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
THURSDAY 21.				SATURDAY 23.			
	h m s	° ' "	"		h m s	° ' "	"
0	10 54 54.86	N. 2 49 7.2	158.30	0	12 40 19.71	S. 9 41 12.0	147.85
1	10 57 5.86	2 33 17.4	158.47	1	12 42 33.78	9 55 59.1	147.23
2	10 59 16.83	2 17 26.6	158.62	2	12 44 47.99	10 10 42.5	146.60
3	11 1 27.77	2 1 34.9	158.73	3	12 47 2.36	10 25 22.1	145.95
4	11 3 38.69	1 45 42.5	158.87	4	12 49 16.88	10 39 57.8	145.28
5	11 5 49.60	1 29 49.3	158.97	5	12 51 31.56	10 54 29.5	144.62
6	11 8 0.49	1 13 55.5	159.05	6	12 53 46.40	11 8 57.2	143.90
7	11 10 11.37	0 58 1.2	159.12	7	12 56 1.40	11 23 20.6	143.20
8	11 12 22.25	0 42 6.5	159.17	8	12 58 16.57	11 37 39.8	142.45
9	11 14 33.12	0 26 11.5	159.20	9	13 0 31.90	11 51 54.5	141.78
10	11 16 44.00	N. 0 10 16.3	159.22	10	13 2 47.40	12 6 4.9	140.95
11	11 18 54.89	S. 0 5 39.0	159.23	11	13 5 3.07	12 20 10.6	140.18
12	11 21 5.79	0 21 34.4	159.20	12	13 7 18.92	12 34 11.7	139.38
13	11 23 16.71	0 37 29.6	159.18	13	13 9 34.94	12 48 8.0	138.58
14	11 25 27.64	0 53 24.7	159.13	14	13 11 51.14	13 1 59.5	137.78
15	11 27 38.60	1 9 19.5	159.07	15	13 14 7.52	13 15 46.0	136.92
16	11 29 49.59	1 25 13.9	158.98	16	13 16 24.08	13 29 27.5	136.07
17	11 32 0.62	1 41 7.8	158.90	17	13 18 40.82	13 43 3.9	135.20
18	11 34 11.68	1 57 1.2	158.78	18	13 20 57.75	13 56 35.1	134.30
19	11 36 22.78	2 12 53.9	158.65	19	13 23 14.86	14 10 0.9	133.43
20	11 38 33.92	2 28 45.8	158.52	20	13 25 32.15	14 23 21.4	132.50
21	11 40 45.12	2 44 36.9	158.35	21	13 27 49.63	14 36 36.4	131.57
22	11 42 56.36	3 0 27.0	158.18	22	13 30 7.30	14 49 45.8	130.63
23	11 45 7.67	S. 3 16 16.1	157.98	23	13 32 25.15	S. 15 2 49.6	129.67
FRIDAY 22.				SUNDAY 24.			
	h m s	° ' "	"		h m s	° ' "	"
0	11 47 19.03	S. 3 32 4.0	157.78	0	13 34 43.20	S. 15 15 47.6	128.70
1	11 49 30.46	3 47 50.7	157.57	1	13 37 1.44	15 28 39.8	127.72
2	11 51 41.95	4 3 36.1	157.32	2	13 39 19.86	15 41 26.1	126.72
3	11 53 53.52	4 19 20.0	157.05	3	13 41 38.48	15 54 6.4	125.70
4	11 56 5.17	4 35 2.3	156.78	4	13 43 57.29	16 6 40.6	124.67
5	11 58 16.89	4 50 43.0	156.50	5	13 46 16.29	16 19 8.6	123.62
6	12 0 28.70	5 6 22.0	156.18	6	13 48 35.49	16 31 30.3	122.57
7	12 2 40.60	5 21 59.1	155.87	7	13 50 54.87	16 43 45.7	121.50
8	12 4 52.59	5 37 34.3	155.52	8	13 53 14.45	16 55 54.7	120.40
9	12 7 4.67	5 53 7.4	155.17	9	13 55 34.22	17 7 57.1	119.28
10	12 9 16.86	6 8 38.4	154.80	10	13 57 54.19	17 19 53.0	118.20
11	12 11 29.14	6 24 7.2	154.40	11	14 0 14.34	17 31 42.2	117.07
12	12 13 41.53	6 39 33.6	153.98	12	14 2 34.69	17 43 24.6	115.93
13	12 15 54.03	6 54 57.5	153.58	13	14 4 55.23	17 55 0.2	114.77
14	12 18 6.64	7 10 19.0	153.12	14	14 7 15.96	18 6 28.8	113.62
15	12 20 19.37	7 25 37.7	152.68	15	14 9 36.88	18 17 50.5	112.43
16	12 22 32.22	7 40 53.8	152.20	16	14 11 57.99	18 29 5.1	111.25
17	12 24 45.20	7 56 7.0	151.70	17	14 14 19.28	18 40 12.6	110.03
18	12 26 58.30	8 11 17.2	151.22	18	14 16 40.76	18 51 12.8	108.83
19	12 29 11.52	8 26 24.5	150.68	19	14 19 2.42	19 2 5.8	107.60
20	12 31 24.88	8 41 28.6	150.15	20	14 21 24.27	19 12 51.4	106.35
21	12 33 38.38	8 56 29.5	149.62	21	14 23 46.30	19 23 29.5	105.12
22	12 35 52.01	9 11 27.2	149.02	22	14 26 8.51	19 34 0.2	103.85
23	12 38 5.79	9 26 21.3	148.45	23	14 28 30.89	19 44 23.3	102.58
24	12 40 19.71	S. 9 41 12.0		24	14 30 53.45	S. 19 54 38.8	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Dist. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Dist. Dec. for 10 ^m .
MONDAY 25.				WEDNESDAY 27.			
0	14 30 53.45	S. 19 54 38.8	101.80	0	16 27 14.92	S. 25 20 25.9	30.88
1	14 33 16.18	20 4 46.6	100.70	1	16 29 41.33	25 23 31.2	29.32
2	14 35 39.08	20 14 46.6	98.70	2	16 32 7.68	25 26 27.1	27.78
3	14 38 2.16	20 24 38.8	97.88	3	16 34 33.97	25 29 13.8	26.23
4	14 40 25.39	20 34 23.1	96.05	4	16 37 0.18	25 31 51.2	24.68
5	14 42 48.79	20 43 59.4	94.72	5	16 39 26.33	25 34 19.3	23.15
6	14 45 12.35	20 53 27.7	93.88	6	16 41 52.39	25 36 38.2	21.60
7	14 47 36.07	21 2 48.0	92.00	7	16 44 18.37	25 38 47.8	20.05
8	14 49 59.95	21 12 0.0	90.65	8	16 46 44.26	25 40 48.1	18.52
9	14 52 23.98	21 21 3.9	89.28	9	16 49 10.04	25 42 39.3	17.00
10	14 54 48.15	21 29 59.6	87.88	10	16 51 35.73	25 44 21.3	15.48
11	14 57 12.47	21 38 46.9	86.50	11	16 54 1.30	25 45 54.0	13.93
12	14 59 36.94	21 47 25.9	85.08	12	16 56 26.75	25 47 17.6	12.40
13	15 2 1.55	21 55 56.4	83.67	13	16 58 52.08	25 48 32.0	10.83
14	15 4 26.28	22 4 18.4	82.27	14	17 1 17.29	25 49 37.3	9.27
15	15 6 51.15	22 12 32.0	80.82	15	17 3 42.36	25 50 33.5	7.75
16	15 9 16.15	22 20 36.9	79.40	16	17 6 7.29	25 51 20.6	6.25
17	15 11 41.28	22 28 33.3	77.95	17	17 8 32.07	25 51 58.7	4.83
18	15 14 6.52	22 36 21.0	76.50	18	17 10 56.70	25 52 27.7	3.35
19	15 16 31.88	22 44 0.0	75.05	19	17 13 21.17	25 52 47.8	1.83
20	15 18 57.34	22 51 30.3	73.60	20	17 15 45.48	25 52 58.8	0.35
21	15 21 22.92	22 58 51.9	72.12	21	17 18 9.62	25 53 0.9	1.12
22	15 23 48.59	23 6 4.6	70.65	22	17 20 33.58	25 52 54.2	2.68
23	15 26 14.36	S. 23 13 8.5	69.17	23	17 22 57.36	S. 25 52 38.5	4.08
TUESDAY 26.				THURSDAY 28.			
0	15 28 40.23	S. 23 20 3.5	67.67	0	17 25 20.96	S. 25 52 14.0	5.55
1	15 31 6.18	23 26 49.5	66.18	1	17 27 44.37	25 51 40.7	7.02
2	15 33 32.21	23 33 26.6	64.68	2	17 30 7.58	25 50 58.6	8.47
3	15 35 58.32	23 39 54.7	63.17	3	17 32 30.59	25 50 7.8	9.92
4	15 38 24.50	23 46 13.7	61.67	4	17 34 53.39	25 49 8.3	11.35
5	15 40 50.75	23 52 23.7	60.16	5	17 37 15.98	25 48 0.2	12.80
6	15 43 17.06	23 58 24.6	58.63	6	17 39 38.35	25 46 43.4	14.22
7	15 45 43.43	24 4 16.4	57.12	7	17 42 0.50	25 45 18.1	15.65
8	15 48 9.85	24 9 59.1	55.68	8	17 44 22.43	25 43 44.2	17.05
9	15 50 36.31	24 15 32.6	54.05	9	17 46 44.13	25 42 1.9	18.47
10	15 53 2.82	24 20 56.9	52.53	10	17 49 5.59	25 40 11.1	19.87
11	15 55 29.36	24 26 12.1	50.98	11	17 51 26.81	25 38 11.9	21.25
12	15 57 55.93	24 31 18.0	49.45	12	17 53 47.78	25 36 4.4	22.63
13	16 0 22.53	24 36 14.7	47.90	13	17 56 8.51	25 33 48.6	24.02
14	16 2 49.14	24 41 2.1	46.37	14	17 58 28.98	25 31 24.5	25.38
15	16 5 15.77	24 45 40.3	44.82	15	18 0 49.20	25 28 52.2	26.73
16	16 7 42.40	24 50 9.2	43.27	16	18 3 9.15	25 26 11.8	28.08
17	16 10 9.03	24 54 28.8	41.72	17	18 5 28.84	25 23 23.3	29.43
18	16 12 35.66	24 58 39.1	40.18	18	18 7 48.26	25 20 26.7	30.75
19	16 15 2.27	25 2 40.2	38.62	19	18 10 7.42	25 17 22.2	32.10
20	16 17 28.86	25 6 31.9	37.08	20	18 12 26.29	25 14 9.6	33.45
21	16 19 55.43	25 10 14.4	35.52	21	18 14 44.89	25 10 40.0	34.80
22	16 22 21.96	25 13 47.5	33.97	22	18 17 3.21	2	
23	16 24 48.46	25 17 11.3	32.43	23	18 19 21.24		
24	16 27 14.92	S. 25 20 25.9		24	18 21 38.98	S.	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>FRIDAY 29.</i>				<i>SATURDAY 30.</i>			
	^h ^m ^s	^o ['] ["]	["]		^h ^m ^s	^o ['] ["]	["]
0	18 21 38.98	S. 25 0 1.1	38.58	0	19 15 12.47	S. 22 54 19.0	66.40
1	18 23 36.43	24 56 9.6	39.38	1	19 17 22.35	22 47 40.6	67.42
2	18 26 13.59	24 52 10.6	41.12	2	19 19 31.91	22 40 56.1	68.45
3	18 28 30.45	24 48 3.9	42.38	3	19 21 41.14	22 34 5.4	69.47
4	18 30 47.02	24 43 49.8	43.60	4	19 23 50.04	22 27 8.6	70.48
5	18 33 3.28	24 39 28.2	44.38	5	19 25 58.62	22 20 5.7	71.47
6	18 35 19.23	24 34 59.2	46.05	6	19 28 6.87	22 12 56.9	72.45
7	18 37 34.88	24 30 22.9	47.28	7	19 30 14.79	22 5 42.2	73.43
8	18 39 50.23	24 25 39.2	48.47	8	19 32 22.39	21 58 21.6	74.38
9	18 42 5.26	24 20 48.4	49.57	9	19 34 29.66	21 50 55.3	75.35
10	18 44 19.98	24 15 50.4	50.38	10	19 36 36.61	21 43 23.2	76.30
11	18 46 34.39	24 10 45.3	52.08	11	19 38 43.23	21 35 45.4	77.23
12	18 48 48.48	24 5 33.1	53.30	12	19 40 49.53	21 28 2.0	78.17
13	18 51 2.25	24 0 13.9	54.33	13	19 42 55.51	21 20 13.0	79.07
14	18 53 15.71	23 54 47.9	55.30	14	19 45 1.17	21 12 18.6	79.98
15	18 55 28.84	23 49 14.9	56.63	15	19 47 6.51	21 4 18.7	80.88
16	18 57 41.65	23 43 35.1	57.75	16	19 49 11.53	20 56 13.4	81.78
17	18 59 54.14	23 37 48.6	58.37	17	19 51 16.23	20 48 2.7	82.63
18	19 2 6.30	23 31 55.4	59.97	18	19 53 20.62	20 39 46.9	83.52
19	19 4 18.15	23 25 55.6	61.07	19	19 55 24.69	20 31 25.8	84.38
20	19 6 29.66	23 19 49.2	62.17	20	19 57 28.45	20 22 59.5	85.22
21	19 8 40.85	23 13 36.2	63.28	21	19 59 31.90	20 14 28.2	86.07
22	19 10 51.72	23 7 16.9	64.30	22	20 1 35.03	20 5 51.8	86.90
23	19 13 2.26	23 0 51.1	65.38	23	20 3 37.86	19 57 10.4	87.72
24	19 15 12.47	S. 22 54 19.0		24	20 5 40.38	S. 19 48 24.1	

PHASES OF THE MOON.

☾ Last Quarter	-----	d	h	m
● New Moon	-----	2	6	29.9
☽ First Quarter	-----	10	10	31.1
○ Full Moon	-----	17	18	32.2
	-----	24	11	27.5

☾ Apogee	-----	d	h
☾ Perigee	-----	5	12
	-----	21	10

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		LUNAR DISTANCES.								
			Noon.	P.L. of diff.	III ^h .	P.L. of diff.	VI ^h .	P.L. of diff.	IX ^h .	P.L. of diff.	
1	Spica	W.	65 ^o 16 ⁱ 48 ⁿ	2840	66 ^o 50 ⁱ 24 ⁿ	2854	68 ^o 23 ⁱ 42 ⁿ	2868	69 ^o 56 ⁱ 42 ⁿ	2881	
	Antares	W.	19 29 15	2835	21 2 58	2850	22 36 21	2863	24 9 27	2877	
	Jupiter	E.	23 28 57	2873	21 56 4	2888	20 23 30	2902	18 51 13	2916	
	Fomalhaut	E.	63 29 39	3321	64 5 52	3348	62 42 36	3377	61 19 53	3407	
	SUN	E.	104 21 21	3207	102 55 20	3222	101 29 37	3237	100 4 12	3253	
2	Spica	W.	77 37 34	2943	79 8 59	2954	80 40 9	2965	82 11 6	2975	
	Antares	W.	31 50 51	2938	33 22 22	2950	34 53 38	2959	36 24 42	2970	
	Fomalhaut	E.	54 34 55	3568	53 15 46	3606	51 57 18	3644	50 39 31	3685	
	SUN	E.	93 1 16	3319	91 37 27	3331	90 13 52	3343	88 50 30	3355	
3	Spica	W.	89 42 50	3019	91 12 39	3027	92 42 18	3034	94 11 49	3041	
	Antares	W.	43 56 58	3014	45 26 53	3022	46 56 39	3029	48 26 16	3035	
	Saturn	W.	7 22 32	3124	8 50 12	3104	10 18 17	3092	11 46 36	3088	
	Fomalhaut	E.	44 22 18	3930	43 9 29	3992	41 57 42	4057	40 46 58	4129	
	SUN	E.	81 56 45	3403	80 34 32	3411	79 12 28	3420	77 50 34	3427	
4	Spica	W.	101 37 30	3067	103 6 20	3071	104 35 5	3074	106 3 47	3078	
	Antares	W.	55 52 32	3061	57 21 29	3065	58 50 21	3069	60 19 9	3071	
	Saturn	W.	19 8 47	3089	20 37 10	3090	22 5 32	3092	23 33 51	3093	
	Jupiter	W.	12 36 8	3103	14 4 14	3105	15 32 17	3109	17 0 16	3112	
	SUN	E.	71 2 56	3457	69 41 44	3461	68 20 36	3464	66 59 32	3469	
5	Spica	W.	113 26 27	3086	114 54 54	3087	116 23 19	3087	117 51 45	3087	
	Antares	W.	67 42 27	3079	69 11 2	3079	70 39 37	3080	72 8 11	3079	
	Saturn	W.	30 55 8	3097	32 23 21	3096	33 51 35	3096	35 19 50	3095	
	Jupiter	W.	24 19 34	3118	25 47 22	3119	27 15 9	3118	28 42 57	3117	
	SUN	E.	60 15 7	3480	58 54 21	3480	57 33 35	3481	56 12 50	3482	
6	Antares	W.	79 31 22	3071	81 0 7	3069	82 28 55	3065	83 57 47	3062	
	Saturn	W.	42 41 29	3085	44 9 57	3082	45 38 29	3078	47 7 5	3075	
	Jupiter	W.	36 8 19	3109	37 30 18	3105	38 58 21	3102	40 26 28	3098	
	SUN	E.	49 29 4	3478	48 8 15	3477	46 47 25	3474	45 26 32	3472	
7	Antares	W.	91 23 18	3041	92 52 40	3035	94 22 9	3030	95 51 45	3024	
	Saturn	W.	54 31 18	3052	56 0 26	3048	57 29 40	3041	58 59 2	3036	
	Jupiter	W.	47 48 17	3076	49 16 56	3071	50 45 41	3065	52 14 34	3060	
	SUN	E.	38 41 26	3489	37 20 16	3486	35 59 3	3483	34 37 46	3481	
12	Pollux	E.	70 11 56	2753	68 36 26	2744	67 0 44	2737	65 24 53	2729	
	Regulus	E.	107 5 0	2730	105 29 0	2721	103 52 48	2712	102 16 24	2703	
13	SUN	W.	30 33 11	3056	32 2 15	3042	33 31 36	3028	35 1 14	3014	
	Pollux	E.	57 23 1	2690	55 46 8	2684	54 9 7	2677	52 31 56	2670	
	Regulus	E.	94 11 29	2660	92 33 55	2651	90 56 9	2643	89 18 12	2634	
14	SUN	W.	42 33 20	2954	44 4 30	2944	45 35 53	2933	47 7 30	2923	
	Pollux	E.	44 23 50	2641	42 45 50	2635	41 7 43	2631	39 29 30	2627	
	Regulus	E.	81 5 31	2592	79 26 25	2583	77 47 6	2575	76 7 37	2566	
15	SUN	W.	54 48 56	2870	56 21 54	2861	57 55 3	2851	59 28 25	2840	
	Aldebaran	W.	14 51 11	3470	16 12 9	3286	17 36 37	3145	19 3 20	3000	
	Pollux	E.	31 17 27	2621	29 39 0	2624	28 0 37	262			
	Regulus	E.	67 47 13	2525	66 6 34	2516	64 25 4				
	Spica	E.	121 50 28	2525	120 9 49	2516	118 28				

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.	Midnight.	P. L. of diff.	XV ^h .	P. L. of diff.	XVIII ^h .	P. L. of diff.	XXI ^h .	P. L. of diff.
	° ' "		° ' "		° ' "		° ' "	
1 Spica η W.	71 29 25	2894	73 1 51	2907	74 34 1	2920	76 5 55	2931
Antares W.	25 42 16	2889	27 14 49	2902	28 47 5	2915	30 19 5	2926
Jupiter E.	17 19 15	2930	15 47 34	2943	14 16 10	2956	12 45 2	2969
Fomalhaut E.	59 57 44	3436	58 36 8	3467	57 15 7	3499	55 54 42	3534
SUN E.	98 39 5	3266	97 14 14	3280	95 49 39	3294	94 25 20	3307
2 Spica η W.	83 41 50	2985	85 12 22	2994	86 42 42	3003	88 12 52	3012
Antares W.	37 55 32	2979	39 26 11	2989	40 56 37	2998	42 26 53	3006
Fomalhaut E.	49 22 28	3728	48 6 11	3773	46 50 41	3823	45 36 3	3875
SUN E.	87 27 22	3365	86 4 26	3375	84 41 41	3385	83 19 7	3395
3 Spica η W.	95 41 11	3047	97 10 26	3052	98 39 34	3058	100 8 35	3063
Antares W.	49 55 45	3041	51 25 7	3047	52 54 21	3052	54 23 29	3056
Saturn W.	13 15 0	3086	14 43 27	3085	16 11 55	3086	17 40 22	3087
Fomalhaut E.	39 37 24	4306	38 29 4	4292	37 22 4	4387	36 16 31	4490
SUN E.	76 28 48	3434	75 7 10	3439	73 45 38	3446	72 24 14	3452
4 Spica η W.	107 32 24	3080	109 0 58	3082	110 29 29	3083	111 57 59	3085
Antares W.	61 47 54	3074	63 16 35	3075	64 45 15	3078	66 13 52	3079
Saturn W.	25 2 9	3095	26 30 25	3096	27 58 40	3096	29 26 54	3096
Jupiter W.	18 28 11	3113	19 56 5	3115	21 23 56	3117	22 51 45	3117
SUN E.	65 38 33	3472	64 17 38	3474	62 56 45	3477	61 35 55	3479
5 Spica η W.	119 20 11	3086	120 48 38	3084	122 17 7	3083	123 45 37	3082
Antares W.	73 36 46	3078	75 5 23	3078	76 34 0	3075	78 2 40	3073
Saturn W.	36 48 6	3094	38 16 23	3092	39 44 43	3090	41 13 5	3088
Jupiter W.	30 10 46	3116	31 38 36	3115	33 6 28	3113	34 34 22	3110
SUN E.	54 52 6	3482	53 31 22	3481	52 10 37	3480	50 49 51	3479
6 Antares W.	85 26 43	3058	86 55 44	3054	88 24 50	3050	89 54 1	3045
Saturn W.	48 35 45	3071	50 4 30	3067	51 33 20	3062	53 2 16	3057
Jupiter W.	41 54 40	3095	43 22 56	3090	44 51 18	3087	46 19 44	3081
SUN E.	44 5 36	3470	42 44 38	3467	41 23 37	3464	40 2 33	3462
7 Antares W.	97 21 28	3018	98 51 18	3012	100 21 16	3006	101 51 22	2999
Saturn W.	60 28 30	3029	61 58 7	3023	63 27 51	3017	64 57 43	3010
Jupiter W.	53 43 33	3083	55 12 40	3047	56 41 55	3040	58 11 18	3033
SUN E.	33 16 27	3449	31 55 6	3447	30 33 42	3444	29 12 15	3441
8 Pollux E.	63 48 51	2720	62 12 38	2713	60 36 16	2705	58 59 43	2699
Regulus E.	100 39 48	2695	99 3 1	2686	97 26 2	2677	95 48 51	2669
9 SUN W.	36 31 9	3002	38 1 19	2989	39 31 45	2978	41 2 25	2966
Pollux E.	50 54 36	2663	49 17 6	2657	47 39 29	2651	46 1 43	2646
Regulus E.	87 40 3	2625	86 1 42	2617	84 23 10	2609	82 44 27	2599
10 SUN W.	48 39 20	2912	50 11 24	2901	51 43 42	2891	53 16 12	2880
Pollux E.	37 51 12	2624	36 12 49	2621	34 34 23	2620	32 55 55	2620
Regulus E.	74 27 55	2558	72 48 2	2549	71 7 57	2541	69 27 41	2533
11 SUN W.	61 2 1	2831	62 35 49	2821	64 9 50	2811	65 44 4	2801
Aldebaran W.	20 33 22	2947	22 4 41	2875	23 37 32	2815	25 11 40	2768
Pollux E.	24 44 16	2648	23 6 26	2663	21 28 57	2687	19 51 59	2717
Regulus E.	61 3 27	2491	59 22 1	2483	57 40 24	2475	55 38 35	2467
SUN W.	115 6 39	2490	113 25 11	2480	111 43 30	2478	110 1 38	2468

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		MEAN TIME.								
			Noon.	P.L. of diff.	III ^h .	P.L. of diff.	VI ^h .	P.L. of diff.	IX ^h .	P.L. of diff.	
16	SUN	W.	67 18 31	2791	68 53 10	2782	70 28 2	2772	72 3 6	2762	
	Aldebaran	W.	26 46 54	2723	28 23 4	2685	30 0 4	2653	31 37 47	2624	
	Regulus	E.	54 16 35	2458	52 34 23	2451	50 52 1	2442	49 9 26	2435	
	Spica γ	E.	108 19 33	2455	106 37 16	2446	104 54 46	2438	103 12 5	2429	
17	SUN	W.	80 1 36	2716	81 37 55	2707	83 14 26	2698	84 51 9	2688	
	Aldebaran	W.	39 55 9	2514	41 36 3	2497	43 17 21	2480	44 59 2	2465	
	Regulus	E.	40 33 49	2396	38 50 9	2390	37 6 20	2382	35 22 20	2376	
	Spica γ	E.	94 35 38	2386	92 51 40	2378	91 7 34	2369	89 23 15	2361	
18	SUN	W.	92 57 48	2644	94 35 43	2636	96 13 49	2627	97 52 7	2619	
	Aldebaran	W.	53 32 28	2400	55 16 3	2388	56 59 55	2377	58 44 3	2366	
	Pollux	W.	12 16 4	2905	13 48 17	2765	15 23 31	2665	17 0 58	2591	
	Regulus	E.	26 40 10	2350	24 55 23	2347	23 10 32	2346	21 25 39	2346	
	Spica γ	E.	80 38 42	2320	78 53 12	2313	77 7 31	2304	75 21 38	2298	
	Antares	E.	126 23 18	2315	124 37 40	2307	122 51 51	2300	121 5 51	2292	
19	SUN	W.	106 6 18	2580	107 45 40	2574	109 25 10	2567	111 4 50	2561	
	Aldebaran	W.	67 28 21	2320	69 13 52	2311	70 59 35	2303	72 45 30	2295	
	Pollux	W.	25 27 41	2392	27 11 27	2369	28 55 46	2350	30 40 32	2332	
	Spica γ	E.	66 29 33	2262	64 42 37	2255	62 55 31	2249	61 8 16	2243	
	Antares	E.	112 13 1	2255	110 25 55	2248	108 38 39	2241	106 51 13	2235	
20	SUN	W.	119 25 15	2533	121 5 43	2529	122 46 16	2525	124 26 55	2521	
	Aldebaran	W.	81 37 43	2263	83 24 37	2258	85 11 38	2253	86 58 47	2248	
	Pollux	W.	39 29 56	2270	41 16 40	2260	43 3 38	2252	44 50 48	2244	
	Spica γ	E.	52 9 51	2216	50 21 47	2212	48 33 37	2208	46 45 21	2204	
	Antares	E.	97 51 49	2206	96 3 31	2202	94 15 6	2198	92 26 35	2193	
21	SUN	W.	132 51 12	2509	134 32 12	2510	136 13 11	2511	137 54 9	2511	
	Aldebaran	W.	95 55 58	2233	97 43 36	2232	99 31 16	2231	101 18 58	2230	
	Pollux	W.	53 49 9	2217	55 37 12	2218	57 25 20	2209	59 13 34	2207	
	Regulus	W.	16 49 8	2250	18 36 21	2235	20 23 56	2224	22 11 48	2216	
	Spica γ	E.	37 42 51	2193	35 54 13	2192	34 5 34	2192	32 16 55	2194	
	Antares	E.	83 22 31	2177	81 33 29	2175	79 44 24	2174	77 55 17	2172	
	Saturn	E.	120 27 41	2180	118 38 43	2177	116 49 41	2176	115 0 37	2175	
	Jupiter	E.	128 3 47	2194	126 15 11	2192	124 26 31	2190	122 37 49	2189	
22	Aldebaran	W.	110 17 23	2236	112 4 57	2240	113 52 25	2243	115 39 49	2248	
	Pollux	W.	68 15 21	2202	70 3 45	2204	71 52 7	2205	73 40 27	2206	
	Regulus	W.	31 13 26	2196	33 1 59	2195	34 50 34	2196	36 39 8	2196	
	Spica γ	E.	23 14 28	2213	21 26 20	2212	19 38 24	2213	17 50 46	2218	
	Antares	E.	68 49 25	2173	67 0 16	2175	65 11 10	2177	63 22 7	2179	
	Saturn	E.	105 55 0	2175	104 5 54	2176	102 16 50	2178	100 27 49	2180	
	Jupiter	E.	113 34 2	2188	111 45 17	2190	109 56 35	2192	108 7 56	2195	
	α Aquilæ	E.	119 8 9	2244	117 36 46	2220	116 4 53	2209	114 32 33	2200	
23	Pollux	W.	82 41 8	2225	84 28 59	2231	86 16 41	2236	88 4 15	2243	
	Regulus	W.	45 41 20	2211	47 29 32	2216	49 17 36	2221	51 5 33	2227	
	Antares	E.	54 18 3	2198	52 29 33	2204	50 41 12	2211	48 53 0	2217	
	Saturn	E.	91 23 53	2200	89 35 25	2205	87 47 4	2211	85 58 53	2217	
	Jupiter	E.	99 5 48	2214	97 17 41	2219	95 29 42	2225	93 41 52	2232	
α Aquilæ	E.	106 46 0	2233	105 12 2	2218	103 37 58	2215	102 3 50	2213		

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.			XV ^h .			XVIII ^h .			XXI ^h .		
		P. L. of diff.	P. L. of diff.	P. L. of diff.	P. L. of diff.	P. L. of diff.	P. L. of diff.	P. L. of diff.	P. L. of diff.				
24	Pollux W.	104 3 39	2324	105 49 4	2335	107 34 13	2348	109 19 3	2360				
	Regulus W.	67 8 55	2308	68 54 50	2313	70 40 30	2325	72 25 53	2337				
	Antares E.	32 47 50	2297	31 1 46	2309	29 15 59	2320	27 30 28	2332				
	Saturn E.	69 53 42	2296	68 7 37	2306	66 21 47	2318	64 36 14	2331				
	Jupiter E.	77 39 49	2310	75 54 4	2321	74 8 35	2332	72 23 22	2344				
	α Aquilæ E.	87 58 54	2267	86 25 53	2280	84 53 9	2294	83 20 42	2911				
	Fomalhaut E.	112 59 57	2765	111 24 43	2765	109 49 29	2766	108 14 16	2769				
25	Regulus W.	81 8 23	2401	82 51 57	2415	84 35 11	2429	86 18 5	2443				
	Spica ♀ W.	27 8 11	2421	28 51 16	2431	30 34 6	2443	32 16 40	2455				
	Antares E.	18 47 31	2399	17 3 55	2415	15 20 41	2431	13 37 50	2447				
	Saturn E.	55 52 58	2395	54 9 16	2408	52 25 53	2422	50 42 50	2437				
	Jupiter E.	63 41 44	2408	61 58 21	2422	60 15 17	2435	58 32 33	2450				
	α Aquilæ E.	75 44 9	3011	74 14 10	3035	72 44 40	3061	71 15 42	3088				
	Fomalhaut E.	100 19 46	2803	98 45 22	2812	97 11 10	2824	95 37 13	2836				
26	Regulus W.	94 47 25	2517	96 28 14	2533	98 8 41	2549	99 48 46	2564				
	Spica ♀ W.	40 44 51	2524	42 25 31	2539	44 5 50	2553	45 45 49	2569				
	Saturn E.	42 12 49	2512	40 31 53	2528	38 51 18	2543	37 11 5	2559				
	Jupiter E.	50 4 2	2524	48 23 22	2540	46 43 4	2556	45 3 8	2571				
	α Aquilæ E.	63 59 54	3251	62 34 45	3289	61 10 21	3330	59 46 44	3372				
	Fomalhaut E.	87 51 45	2909	86 19 38	2926	84 47 52	2944	83 16 29	2962				
	α Pegasi E.	109 6 1	2682	107 28 57	2694	105 52 9	2707	104 15 38	2720				
27	Regulus W.	108 3 45	2644	109 41 40	2660	111 19 13	2676	112 56 25	2693				
	Spica ♀ W.	54 0 29	2646	55 38 22	2661	57 15 55	2677	58 53 6	2692				
	Saturn E.	28 55 32	2641	27 17 32	2667	25 39 54	2673	24 2 38	2690				
	Jupiter E.	36 48 49	2650	35 11 2	2665	33 33 35	2681	31 56 30	2697				
	α Aquilæ E.	53 1 50	3630	51 43 48	3692	50 26 52	3758	49 11 6	3829				
	Fomalhaut E.	75 45 39	3066	74 16 48	3089	72 48 25	3112	71 20 30	3137				
	α Pegasi E.	96 17 38	2792	94 42 59	2807	93 8 40	2821	91 34 40	2838				
28	Spica ♀ W.	66 53 58	2768	68 29 8	2782	70 4 0	2797	71 38 32	2811				
	Antares W.	21 7 47	2765	22 43 1	2779	24 17 57	2792	25 52 35	2808				
	Saturn E.	16 1 56	2777	14 26 58	2796	12 52 25	2817	11 18 19	2841				
	Jupiter E.	23 56 13	2773	22 21 9	2788	20 46 25	2802	19 12 0	2817				
	Fomalhaut E.	64 8 34	3271	62 43 48	3301	61 19 37	3332	59 56 2	3363				
	α Pegasi E.	83 49 44	2916	82 17 45	2932	80 46 7	2948	79 14 49	2964				
	SUN E.	129 36 38	3184	128 9 9	3148	126 41 57	3163	125 15 4	3178				
29	Spica ♀ W.	79 26 43	2879	80 59 29	2891	82 31 59	2908	84 4 14	2916				
	Antares W.	33 41 12	2873	35 14 5	2887	36 46 41	2899	38 19 1	2910				
	Fomalhaut E.	53 7 43	3546	51 48 9	3588	50 29 22	3632	49 11 23	3679				
	α Pegasi E.	71 43 19	3043	70 14 0	3060	68 45 2	3076	67 16 23	3092				
	SUN E.	118 4 54	3248	116 39 42	3261	115 14 45	3274	113 50 3	3287				
30	Spica ♀ W.	91 41 48	2969	93 12 39	2980	94 43 17	2989	96 13 44	2998				
	Antares W.	45 57 6	2965	47 28 3	2974	48 58 48	2984	50 29 21	2992				
	Fomalhaut E.	42 54 57	3967	41 42 45	4039	40 31 44	4117	39 21 59	4202				
	α Pegasi E.	59 58 4	3173	58 31 23	3189	57 5 1	3207	55 39 0	3224				
	SUN E.	106 50 5	3244	105 26 44	3254	104 3 35	3264	102 40 37	3273				

CONFIGURATIONS OF THE SATELLITES OF JUPITER.

At 16^h, MEAN TIME.

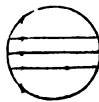
Day of the Month.	West.		East.
1		8.2 ○	-1 ●-4
2	8.	.1 ○	:4
3	2. ○	-3	○ 1. -4
4	-3 ●	.2 .1 ○	-4
5		○ 1. 2	-3 4.
6	-1 ●		○ 2. 3. 4.
7		2. 1. ○	3. 4.
8		.2 3. ○	-1 4.
9	3.	1. ○	4. -2
10		-3 4. ○	2. 1.
11		4. .2 .1	○
12	4.	4.	○ 1. 3
13	4.		○ 2. 3 ●-1
14	-4	2. 1. ○	3.
15	-4	.2 ○	-1 ○ 3.
16	-4 3.	1. ○	-2
17	-3	.4 ○	2. 1.
18		2. .3 .1	○ -4
19	-2 ●		○ 1. 3 -4
20		.1 ○	2. -3 -4
21	1. ○	2. ○	3. -4
22		-2 ○	3. 1. 4.
23		3. 1. ○	-2 4.
24		.3 ○	2. 1. 4.
25		2. 3. .1 ○	4.
26	-3 ●		○ 4. 3. 1.
27		4. -1 ○	2. -3
28	4.	2. ○ 1.	3.
29	4.	.2 ○	3. ●-1
30	4.	3. 1. ○	-2

This Table represents, at 16^h after *Mean Noon* of each day of the month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page; the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the numeral. A white circle (○) at the left or right hand of the page, denotes that the Satellite placed by the side of it is on the disc of Jupiter, and a black circle (●) that it is either *behind* the disc, or in the shadow, of Jupiter.

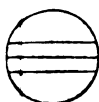
ECLIPSES OF THE SATELLITES OF JUPITER.

SATELLITE.	Day of the Month.	Mean Time.	Sidereal Time.	PHASE as seen in an inverting Telescope.
		h m s	h m s	
I.	1	5 28 59.8	6 7 38.0	Im.
	2	23 57 20.3	0 42 57.1	Im.
	4	18 25 44.9	19 18 20.3	Im.
	6	12 54 4.5	13 53 38.5	Im.
	8	7 22 30.7	8 29 3.4	Im.
	10	1 50 51.5	3 4 22.8	Im.
	11	20 19 16.7	21 39 46.7	Im.
	13†	14 47 36.6	16 15 5.1	Im.
	15	9 16 3.5	10 50 30.7	Im.
	17	3 44 25.0	5 25 50.8	Im.
	18	22 12 50.8	0 1 15.3	Im.
	20†	16 41 11.2	18 36 34.3	Im.
	22	11 9 38.9	13 12 0.7	Im.
	24	5 38 1.0	7 47 21.4	Im.
	26	0 6 27.7	2 22 46.7	Im.
27	18 34 48.8	20 58 6.4	Im.	
29†	13 3 17.2	15 33 33.5	Im.	
II.	1	17 59 36.8	18 40 18.2	Im.
	5	7 16 38.1	8 11 20.2	Im.
	8	20 33 48.8	21 42 31.5	Im.
	12	9 50 47.9	11 13 31.2	Im.
	15	23 7 53.2	0 44 37.0	Im.
	19	12 24 50.1	14 15 34.6	Im.
	23	1 41 50.5	3 46 35.6	Im.
	26*	14 58 45.6	17 17 31.2	Im.
	30	4 15 42.2	6 48 28.4	Im.
III.	4	13 46 29.0	14 38 18.5	Im.
	4†	16 53 3.7	17 45 23.9	Em.
	11	17 45 11.9	19 5 16.5	Im.
	11	20 52 35.3	22 13 10.7	Em.
	18	21 43 22.6	23 31 42.2	Im.
	19	0 51 33.3	2 40 23.9	Em.
	26	1 41 28.7	3 58 3.4	Im.
26	4 50 27.2	7 7 32.9	Em.	
IV.	1	4 4 51.7	4 43 16.0	Im.
	1	6 22 11.2	7 0 58.1	Em.
	17	22 0 23.5	23 44 49.4	Im.
	18	0 30 2.8	2 14 53.3	Em.

i *



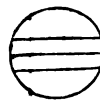
i *



i e *



i e *



APPROXIMATE SIDEREAL TIMES
OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER,
AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.			TRANSITS OF SATELLITES.			TRANSITS OF SHADOWS.		
	Immersion.	Emersion.		Ingress.	Egress.		Ingress.	Egress.	
	d h m	d h m		d h m	d h m		d h m	d h m	
I.		1 9 42		2 4 47	2 7 5		2 3 29	2 5 47	
		3 4 17		3 23 23	4 1 41		3 22 5	3 0 23	
		4 22 53		5† 17 58	5 20 17		5† 16 40	5 18 58	
		6* 17 29		7 12 34	7 14 52		7 11 15	7 13 33	
		8 12 4		9 7 9	9 9 28		9 5 51	9 8 9	
	In	10 6 40		11 1 45	11 4 3		10 0 26	11 2 44	
		11 1 15		12 20 20	12 22 39		12 19 1	12 21 19	
	the	13 19 50		14 14 55	14* 17 14		14 13 36	14† 15 55	
		15 14 26		16 9 30	16 11 49		16 8 12	16 10 30	
	Shadow.	17 9 1		18 4 5	18 6 24		18 2 47	18 5 5	
		19 3 36		19 22 40	19 0 59		19 21 22	19 23 41	
		20 22 11		21* 17 15	21 19 34		21† 15 58	21† 18 16	
		22* 16 47		23 11 50	23 14 9		23 10 33	23 12 51	
		24 11 21		25 6 25	25 8 44		25 5 8	25 7 26	
		26 5 57		26 1 0	27 3 19		26 23 44	26 2 2	
		27 0 31		28 19 35	28 21 54		28† 18 19	28 20 37	
	29† 19 6		30 14 9	30† 16 29		30 12 54	30 15 12		
II.		1 0 5		3† 15 30	3 18 23		3 12 56	3† 15 46	
	In	5 13 37		7 5 3	7 7 56		7 2 27	7 5 18	
		9 3 9		10 18 35	10 21 28		10† 15 59	10 18 49	
	the	12† 16 40		14 8 7	14 11 0		14 5 31	14 8 21	
		16 6 11		17 21 37	17 0 31		17 19 2	17 21 53	
	Shadow.	19 19 42		21 11 8	21 14 2		21 8 34	21 11 23	
		23 9 11		24 0 38	25 3 32		24 22 6	24 0 57	
		26 22 40		28 14 8	28* 17 2		28 11 38	28 14 29	
	30 12 9								
III.	4 19 48	4 23 11	1 5 45	1 9 8	0 0 34	1 3 50			
	11 0 17	12 3 41	8 10 15	8 13 39	8 5 0	8 8 17			
	19 4 42	19 8 7	15 14 42	15† 18 7	15 9 26	15 12 44			
	26 9 2	26 12 28	22 19 5	22 22 31	22 13 53	22* 17 12			
			29 23 24	30 2 50	29† 18 20	29 21 39			
IV.	1† 16 29	1 19 33	10 3 3	10 6 13	9 15 9	9† 17 42			
	18 11 38	18 14 54	26 21 48	26 1 9	26 10 13	26 12 58			

Day of the Month.	For correcting the Places of the Fixed Stars.				Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0 ^h .567309. Days.	From Mean Noon of January 1.	
	At Mean Midnight,						Day of the Year.	Fraction of the Year.
	Logarithm of							
	A	B	C	D				
1	-1.2620	-0.6212	+9.7348	-0.6650	23 18 26.17	9	90	.246
2	1.2603	0.6554	9.7365	0.6636	23 14 30.26	10	91	.249
3	1.2585	0.6869	9.7382	0.6621	23 10 34.35	11	92	.252
4	-1.2566	-0.7161	+9.7399	-0.6605	23 6 38.44	12	93	.255
5	1.2546	0.7434	9.7416	0.6589	23 2 42.54	13	94	.257
6	1.2524	0.7689	9.7433	0.6572	22 58 46.63	14	95	.260
7	-1.2501	-0.7929	+9.7450	-0.6555	22 54 50.72	15	96	.263
8	1.2477	0.8155	9.7467	0.6537	22 50 54.81	16	97	.266
9	1.2451	0.8368	9.7484	0.6518	22 46 58.90	17	98	.268
10	-1.2423	-0.8570	+9.7501	-0.6499	22 43 3.00	18	99	.271
11	1.2395	0.8762	9.7519	0.6480	22 39 7.09	19	100	.274
12	1.2365	0.8944	9.7536	0.6460	22 35 11.18	20	101	.277
13	-1.2333	-0.9118	+9.7554	-0.6439	22 31 15.27	21	102	.279
14	1.2299	0.9284	9.7571	0.6418	22 27 19.36	22	103	.282
15	1.2265	0.9442	9.7589	0.6396	22 23 23.46	23	104	.285
16	-1.2229	-0.9593	+9.7607	-0.6374	22 19 27.55	24	105	.287
17	1.2191	0.9738	9.7625	0.6351	22 15 31.64	25	106	.290
18	1.2151	0.9877	9.7643	0.6328	22 11 35.73	26	107	.293
19	-1.2110	-1.0010	+9.7661	-0.6304	22 7 39.82	27	108	.296
20	1.2068	1.0138	9.7679	0.6280	22 3 43.91	28	109	.298
21	1.2023	1.0261	9.7697	0.6255	21 59 48.01	29	110	.301
22	-1.1977	-1.0380	+9.7716	-0.6230	21 55 52.10	30	111	.304
23	1.1930	1.0494	9.7734	0.6205	21 51 56.19	31	112	.307
24	1.1880	1.0604	9.7753	0.6179	21 48 0.28	32	113	.309
25	-1.1829	-1.0709	+9.7772	-0.6153	21 44 4.37	33	114	.312
26	1.1776	1.0811	9.7791	0.6126	21 40 8.46	34	115	.315
27	1.1721	1.0910	9.7810	0.6099	21 36 12.55	35	116	.318
28	-1.1664	-1.1005	+9.7829	-0.6072	21 32 16.63	36	117	.320
29	1.1605	1.1097	9.7848	0.6045	21 28 20.73	37	118	.323
30	1.1544	1.1185	9.7867	0.6017	21 24 24.83	38	119	.326
31	-1.1481	-1.1271	+9.7887	-0.5988	21 20 28.92	39	120	.329

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, to be subtracted from Apparent Time.	Diff. for 1 hour.
		Apparent Right Ascension.	Diff. for 1 hour.	Apparent Declination.	Diff. for 1 hour.			
		^h ^m ^s	[°] ['] ["]	[°] ['] ["]	[°] ['] ["]	^m ^s	^m ^s	^s
Sun.	1	2 32 57.98	9.543	N.15 2 12.9	45.15	1 5.96	3 2.26	0.312
Mon.	2	2 36 47.02	9.567	15 20 16.6	44.52	1 6.04	3 9.75	0.289
Tues.	3	2 40 36.63	9.591	15 38 5.1	43.88	1 6.12	3 16.68	0.265
Wed.	4	2 44 26.81	9.615	15 55 38.3	43.23	1 6.20	3 23.04	0.241
Thur.	5	2 48 17.56	9.639	16 12 55.7	42.56	1 6.28	3 28.82	0.217
Frid.	6	2 52 8.89	9.663	16 29 57.1	41.88	1 6.36	3 34.04	0.193
Sat.	7	2 56 0.80	9.687	16 46 42.1	41.18	1 6.44	3 38.67	0.168
Sun.	8	2 59 53.30	9.712	17 3 10.5	40.47	1 6.52	3 42.71	0.144
Mon.	9	3 3 46.38	9.736	17 19 21.8	39.75	1 6.60	3 46.18	0.120
Tues.	10	3 7 40.04	9.760	17 35 15.8	39.01	1 6.68	3 49.08	0.096
Wed.	11	3 11 34.27	9.784	17 50 52.1	38.27	1 6.77	3 51.39	0.073
Thur.	12	3 15 29.08	9.807	18 6 10.6	37.50	1 6.85	3 53.13	0.049
Frid.	13	3 19 24.45	9.831	18 21 10.7	36.73	1 6.93	3 54.31	0.026
Sat.	14	3 23 20.39	9.854	18 35 52.3	35.95	1 7.01	3 54.93	0.003
Sun.	15	3 27 16.89	9.877	18 50 15.1	35.15	1 7.10	3 54.99	0.021
Mon.	16	3 31 13.94	9.900	19 4 18.8	34.35	1 7.18	3 54.49	0.043
Tues.	17	3 35 11.54	9.923	19 18 3.1	33.53	1 7.26	3 53.45	0.066
Wed.	18	3 39 9.68	9.945	19 31 27.8	32.70	1 7.34	3 51.87	0.089
Thur.	19	3 43 8.37	9.968	19 44 32.7	31.86	1 7.42	3 49.74	0.111
Frid.	20	3 47 7.60	9.990	19 57 17.4	31.01	1 7.50	3 47.08	0.133
Sat.	21	3 51 7.36	10.012	20 9 41.7	30.15	1 7.57	3 43.89	0.155
Sun.	22	3 55 7.64	10.033	20 21 45.4	29.29	1 7.65	3 40.17	0.177
Mon.	23	3 59 8.44	10.055	20 33 28.3	28.41	1 7.72	3 35.93	0.198
Tues.	24	4 3 9.76	10.077	20 44 50.2	27.52	1 7.79	3 31.18	0.219
Wed.	25	4 7 11.60	10.098	20 55 50.7	26.63	1 7.86	3 25.92	0.240
Thur.	26	4 11 13.94	10.118	21 6 29.7	25.72	1 7.93	3 20.16	0.261
Frid.	27	4 15 16.78	10.139	21 16 46.9	24.81	1 8.00	3 13.90	0.282
Sat.	28	4 19 20.11	10.159	21 26 42.3	23.88	1 8.07	3 7.14	0.302
Sun.	29	4 23 23.93	10.178	21 36 15.4	22.95	1 8.13	2 59.90	0.321
Mon.	30	4 27 28.21	10.197	21 45 26.2	22.01	1 8.19	2 52.20	0.340
Tues.	31	4 31 32.95	10.216	21 54 14.4	21.06	1 8.25	2 44.04	0.359
Wed.	32	4 35 38.13		N.22 2 39.8		1 8.31	2 35.43	

* Mean Time of the Semidiameter passing may be found by subtracting

AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S			Equation of Time, to be added to Mean Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semidiam.*		
Sun.	1	2 32 58.46	N.15 2 15.2	15 53.0	3 2.28	2 36 0.74
Mon.	2	2 36 47.58	15 20 18.9	15 52.7	3 9.77	2 39 57.29
Tues.	3	2 40 37.15	15 38 7.5	15 52.5	3 16.69	2 43 53.85
Wed.	4	2 44 27.35	15 55 40.8	15 52.3	3 23.05	2 47 50.40
Thur.	5	2 48 18.12	16 12 58.2	15 52.0	3 28.84	2 51 46.96
Frid.	6	2 52 9.46	16 29 59.6	15 51.8	3 34.05	2 55 43.51
Sat.	7	2 56 1.59	16 46 44.6	15 51.6	3 38.68	2 59 40.07
Sun.	8	2 59 53.90	17 3 13.0	15 51.4	3 42.72	3 3 36.63
Mon.	9	3 3 46.99	17 19 24.3	15 51.2	3 46.19	3 7 33.18
Tues.	10	3 7 40.66	17 35 18.3	15 50.9	3 49.08	3 11 29.74
Wed.	11	3 11 34.90	17 50 54.6	15 50.7	3 51.39	3 15 26.29
Thur.	12	3 15 29.71	18 6 13.0	15 50.5	3 53.13	3 19 22.85
Frid.	13	3 19 25.09	18 21 13.1	15 50.3	3 54.31	3 23 19.41
Sat.	14	3 23 21.03	18 35 54.7	15 50.1	3 54.93	3 27 15.96
Sun.	15	3 27 17.53	18 50 17.4	15 49.9	3 54.99	3 31 12.52
Mon.	16	3 31 14.59	19 4 21.1	15 49.8	3 54.49	3 35 9.08
Tues.	17	3 35 12.19	19 18 5.3	15 49.6	3 53.45	3 39 5.63
Wed.	18	3 39 10.38	19 31 30.0	15 49.4	3 51.86	3 43 2.19
Thur.	19	3 43 9.01	19 44 34.7	15 49.2	3 49.73	3 46 58.75
Frid.	20	3 47 8.23	19 57 19.4	15 49.0	3 47.07	3 50 53.30
Sat.	21	3 51 7.98	20 9 43.6	15 48.9	3 43.88	3 54 51.86
Sun.	22	3 55 8.26	20 21 47.3	15 48.7	3 40.16	3 58 48.42
Mon.	23	3 59 9.05	20 33 30.1	15 48.5	3 35.92	4 2 44.97
Tues.	24	4 3 10.36	20 44 51.8	15 48.4	3 31.17	4 6 41.53
Wed.	25	4 7 12.18	20 55 52.2	15 48.2	3 25.91	4 10 38.09
Thur.	26	4 11 14.50	21 6 31.1	15 48.1	3 20.14	4 14 34.65
Frid.	27	4 15 17.32	21 16 48.3	15 47.9	3 13.88	4 18 31.20
Sat.	28	4 19 20.64	21 26 43.5	15 47.8	3 7.12	4 22 27.76
Sun.	29	4 23 24.44	21 36 16.6	15 47.6	2 59.88	4 26 24.32
Mon.	30	4 27 28.70	21 45 27.3	15 47.5	2 52.18	4 30 20.88
Tues.	31	4 31 33.41	21 54 15.4	15 47.3	2 44.02	4 34 17.43
Wed.	32	4 35 38.57	N.22 2 40.7	15 47.2	2 35.42	4 38 13.99

* The Semidiameter for Apparent Noon may be assumed the same as that for Mean Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S			
	Longitude.	Latitude.		Semidiameter.		Horizontal Parallax.	
	Noon.	Noon.	Noon.	Noon.	Midnight.	Noon.	Midnight.
1	40° 40' 7" 0	N. 0° 36'	0.0035951	14° 53' 3"	14° 50' 5"	54° 38' 3"	54° 27' 8"
2	41° 38' 15" 5	0° 48'	0.0037044	14° 48' 2"	14° 46' 7"	54° 19' 6"	54° 14' 1"
3	42° 36' 22" 7	0° 60'	0.0038126	14° 45' 9"	14° 45' 9"	54° 11' 1"	54° 10' 9"
4	43° 34' 28" 4	0° 71'	0.0039196	14° 46' 5"	14° 47' 7"	54° 13' 1"	54° 17' 7"
5	44° 32' 32" 7	0° 80'	0.0040252	14° 49' 6"	14° 52' 1"	54° 24' 7"	54° 33' 6"
6	45° 30' 35" 5	0° 86'	0.0041292	14° 55' 0"	14° 58' 4"	54° 44' 4"	54° 57' 0"
7	46° 28' 36" 9	0° 90'	0.0042315	15° 2' 3"	15° 6' 4"	55° 11' 1"	55° 26' 4"
8	47° 26' 37" 0	0° 90'	0.0043321	15° 10' 8"	15° 15' 5"	55° 42' 5"	55° 59' 5"
9	48° 24' 35" 3	0° 88'	0.0044307	15° 20' 2"	15° 24' 9"	56° 16' 9"	56° 34' 3"
10	49° 22' 32" 5	0° 83'	0.0045273	15° 29' 6"	15° 34' 2"	56° 51' 5"	57° 8' 4"
11	50° 20' 28" 0	0° 74'	0.0046220	15° 38' 7"	15° 42' 9"	57° 24' 7"	57° 40' 0"
12	51° 18' 21" 8	0° 63'	0.0047148	15° 46' 8"	15° 50' 5"	57° 54' 5"	58° 8' 0"
13	52° 16' 14" 0	0° 51'	0.0048057	15° 53' 8"	15° 56' 8"	58° 20' 3"	58° 31' 3"
14	53° 14' 4" 5	0° 38'	0.0048947	15° 59' 5"	16° 1' 8"	58° 41' 0"	58° 49' 6"
15	54° 11' 53" 4	0° 24'	0.0049820	16° 3' 9"	16° 5' 6"	58° 57' 1"	59° 3' 4"
16	55° 9' 40" 6	N. 0° 10'	0.0050676	16° 7' 0"	16° 8' 1"	59° 8' 5"	59° 12' 6"
17	56° 7' 26" 0	S. 0° 03'	0.0051516	16° 8' 9"	16° 9' 4"	59° 15' 6"	59° 17' 4"
18	57° 5' 9" 8	0° 14'	0.0052340	16° 9' 5"	16° 9' 3"	59° 17' 9"	59° 17' 0"
19	58° 2' 52" 0	0° 22'	0.0053150	16° 8' 7"	16° 7' 7"	59° 14' 9"	59° 11' 2"
20	59° 0' 32" 7	0° 28'	0.0053947	16° 6' 1"	16° 4' 2"	59° 5' 4"	58° 58' 2"
21	59° 58' 11" 8	0° 31'	0.0054733	16° 1' 7"	15° 58' 7"	58° 49' 2"	58° 38' 3"
22	60° 55' 49" 4	0° 31'	0.0055506	15° 55' 3"	15° 51' 4"	58° 25' 6"	58° 11' 4"
23	61° 53' 25" 6	0° 29'	0.0056269	15° 47' 2"	15° 42' 6"	57° 55' 8"	57° 39' 1"
24	62° 51' 0" 5	0° 23'	0.0057022	15° 37' 8"	15° 32' 7"	57° 21' 8"	57° 2' 8"
25	63° 48' 34" 3	0° 14'	0.0057764	15° 27' 5"	15° 22' 4"	56° 43' 8"	56° 24' 9"
26	64° 46' 6" 9	S. 0° 08'	0.0058496	15° 17' 3"	15° 12' 3"	56° 6' 1"	55° 47' 8"
27	65° 43' 38" 5	N. 0° 08'	0.0059217	15° 7' 6"	15° 3' 2"	55° 30' 6"	55° 14' 4"
28	66° 41' 9" 2	0° 21'	0.0059924	14° 59' 2"	14° 55' 7"	54° 59' 9"	54° 46' 8"
29	67° 38' 39" 0	0° 35'	0.0060618	14° 52' 6"	14° 50' 1"	54° 35' 5"	54° 26' 5"
30	68° 36' 7" 9	0° 47'	0.0061298	14° 48' 3"	14° 47' 1"	54° 19' 8"	54° 15' 4"
31	69° 33' 36" 1	0° 57'	0.0061962	14° 46' 6"	14° 46' 7"	54° 13' 5"	54° 14' 1"
32	70° 31' 3" 6	N. 0° 66'	0.0062608	14° 47' 7"	14° 49' 3"	54° 17' 5"	54°

MEAN TIME.

		THE MOON'S														
Day of the Week.	Day of the Month.	Longitude.			Latitude.		Age.	Meridian								
		Noon.		Midnight.	Noon.		Midnight.	Noon.	Passage.							
		^o	[']	["]	^o	[']	["]	^o	[']	["]						
Sun.	1	299	22	15.4	305	20	49.7	N.0	30	18.8	N.1	1	44.6	20.6	18	2.7
Mon.	2	311	17	21.6	317	12	30.9	1	32	19.3	2	1	47.1	21.6	18	45.7
Tues.	3	323	6	59.5	329	1	26.7	2	29	52.2	2	56	20.4	22.6	19	26.9
Wed.	4	334	56	31.5	340	52	49.9	3	20	56.6	3	43	26.5	23.6	20	7.2
Thur.	5	346	50	56.9	352	51	23.3	4	3	35.7	4	21	10.5	24.6	20	47.6
Frid.	6	358	54	37.6	5	1	3.8	4	35	56.8	4	47	42.2	25.6	21	29.3
Sat.	7	11	11	1.9	17	24	47.0	4	56	12.9	5	1	18.1	26.6	22	13.2
Sun.	8	23	42	30.2	30	4	16.8	5	2	47.9	5	0	33.8	27.6	23	0.4
Mon.	9	36	30	7.7	42	59	59.6	4	54	30.3	4	44	34.7	28.6	23	51.4
Tues.	10	49	33	44.3	56	11	10.8	4	30	47.5	4	13	13.6	0.0	6	
Wed.	11	62	52	5.3	69	36	11.9	3	52	1.6	3	27	23.8	1.0	0	46.8
Thur.	12	76	23	13.9	83	12	54.1	2	59	37.2	2	29	3.1	2.0	1	44.2
Frid.	13	90	4	56.3	96	59	5.4	1	56	6.2	1	21	14.2	3.0	2	43.5
Sat.	14	103	55	7.8	110	52	51.7	N.0	44	58.4	N.0	7	51.1	4.0	3	42.1
Sun.	15	117	52	7.9	124	52	47.4	S.0	29	33.6	S.1	6	40.0	5.0	4	38.5
Mon.	16	131	54	42.6	138	57	46.1	1	42	53.1	2	17	38.2	6.0	5	32.0
Tues.	17	146	1	50.8	153	6	47.8	2	50	21.9	3	20	32.4	7.0	6	23.0
Wed.	18	160	12	26.1	167	18	32.1	3	47	39.7	4	11	18.0	8.0	7	12.3
Thur.	19	174	24	49.4	181	30	56.8	4	31	3.4	4	46	37.7	9.0	8	1.1
Frid.	20	188	36	31.6	195	41	6.9	4	57	46.1	5	4	20.1	10.0	8	50.6
Sat.	21	202	44	14.1	209	45	22.4	5	6	14.7	5	3	32.3	11.0	9	41.6
Sun.	22	216	44	0.0	223	39	37.4	4	56	18.6	4	44	46.2	12.0	10	34.9
Mon.	23	230	31	45.3	237	19	59.3	4	29	10.9	4	9	53.3	13.0	11	30.2
Tues.	24	244	3	56.0	250	43	20.1	3	47	16.7	3	21	46.5	14.0	12	26.8
Wed.	25	257	18	0.0	263	47	50.1	2	53	50.2	2	23	55.6	15.0	13	22.9
Thur.	26	270	12	50.5	276	33	7.8	1	52	29.9	1	20	0.7	16.0	14	17.1
Frid.	27	282	48	53.7	289	0	26.0	S.0	46	53.8	S.0	13	33.3	17.0	15	8.2
Sat.	28	295	8	5.6	301	12	19.2	N.0	19	38.0	N.0	52	19.4	18.0	15	55.8
Sun.	29	307	13	35.6	313	12	27.7	1	24	11.1	1	54	55.6	19.0	16	40.3
Mon.	30	319	9	29.7	325	5	17.7	2	24	16.3	2	51	57.9	20.0	17	22.2
Tues.	31	331	0	29.2	336	55	41.8	3	17	46.0	3	41	27.3	21.0	18	2.7
		343	51	34.2	348	48	43.9	N.4	2	48.5	N.4	21	37.0	22.0	18	42.7

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>SUNDAY 1.</i>				<i>TUESDAY 3.</i>			
0	^h 20 ^m 5 ^s 40 38	S. 19 48 24 1	88 53	0	^h 21 ^m 38 ^s 29 59	S. 11 27 48 7	117 60
1	20 7 42 60	19 39 32 9	89 32	1	21 40 20 37	11 16 3 1	118 03
2	20 9 44 51	19 30 37 0	90 13	2	21 42 10 99	11 4 14 9	118 43
3	20 11 46 12	19 21 36 2	90 90	3	21 44 1 46	10 52 24 3	118 85
4	20 13 47 43	19 12 30 8	91 68	4	21 45 51 77	10 40 31 2	119 23
5	20 15 48 44	19 3 20 7	92 45	5	21 47 41 95	10 28 35 8	119 63
6	20 17 49 16	18 54 6 0	93 20	6	21 49 31 98	10 16 38 0	120 06
7	20 19 49 59	18 44 46 8	93 95	7	21 51 21 87	10 4 37 8	120 40
8	20 21 49 73	18 35 23 1	94 70	8	21 53 11 63	9 52 35 4	120 77
9	20 23 49 58	18 25 54 9	95 42	9	21 55 1 26	9 40 30 8	121 15
10	20 25 49 14	18 16 22 4	96 13	10	21 56 50 76	9 28 23 9	121 50
11	20 27 48 42	18 6 45 6	96 37	11	21 58 40 14	9 16 14 9	121 35
12	20 29 47 42	17 57 4 4	97 57	12	22 0 29 40	9 4 3 8	122 20
13	20 31 46 15	17 47 19 0	98 25	13	22 2 18 55	8 51 50 6	122 53
14	20 33 44 60	17 37 29 5	98 98	14	22 4 7 59	8 39 35 4	122 35
15	20 35 42 77	17 27 35 8	99 62	15	22 5 56 52	8 27 18 3	123 20
16	20 37 40 68	17 17 38 1	100 30	16	22 7 45 35	8 14 59 1	123 52
17	20 39 38 33	17 7 36 3	100 95	17	22 9 34 08	8 2 38 0	123 32
18	20 41 35 70	16 57 30 6	101 62	18	22 11 22 71	7 50 15 1	124 13
19	20 43 32 82	16 47 20 9	102 25	19	22 13 11 26	7 37 50 3	124 43
20	20 45 29 68	16 37 7 4	102 98	20	22 14 59 72	7 25 23 7	124 73
21	20 47 26 28	16 26 50 1	103 52	21	22 16 48 09	7 12 55 3	125 02
22	20 49 22 63	16 16 29 0	104 15	22	22 18 36 39	7 0 25 2	125 30
23	20 51 18 73	S. 16 6 4 1	104 78	23	22 20 24 61	S. 6 47 53 4	125 58
<i>MONDAY 2.</i>				<i>WEDNESDAY 4.</i>			
0	20 53 14 58	S. 15 55 35 6	105 36	0	22 22 12 76	S. 6 35 19 9	125 35
1	20 55 10 19	15 45 3 5	105 97	1	22 24 0 84	6 22 44 8	126 12
2	20 57 5 55	15 34 27 7	106 53	2	22 25 48 86	6 10 8 1	126 37
3	20 59 0 68	15 23 48 5	107 18	3	22 27 36 82	5 57 29 9	126 63
4	21 0 55 58	15 13 5 7	107 70	4	22 29 24 72	5 44 50 1	126 87
5	21 2 50 24	15 2 19 5	108 27	5	22 31 12 57	5 32 8 9	127 10
6	21 4 44 68	14 51 29 9	108 82	6	22 33 0 37	5 19 26 3	127 33
7	21 6 38 89	14 40 37 0	109 37	7	22 34 48 14	5 6 42 3	127 55
8	21 8 32 88	14 29 40 8	109 92	8	22 36 35 86	4 53 57 0	127 78
9	21 10 26 65	14 18 41 3	110 45	9	22 38 23 55	4 41 10 3	127 98
10	21 12 20 21	14 7 38 6	110 97	10	22 40 11 21	4 28 22 4	128 20
11	21 14 13 56	13 56 32 8	111 50	11	22 41 58 84	4 15 33 2	128 38
12	21 16 6 71	13 45 23 8	112 00	12	22 43 46 45	4 2 42 9	128 58
13	21 17 59 65	13 34 11 8	112 52	13	22 45 34 05	3 49 51 4	128 75
14	21 19 52 39	13 22 56 7	113 02	14	22 47 21 63	3 36 58 9	128 93
15	21 21 44 94	13 11 38 6	113 50	15	22 49 9 20	3 24 5 3	129 12
16	21 23 37 29	13 0 17 6	113 98	16	22 50 56 76	3 11 10 6	129 28
17	21 25 29 45	12 48 53 7	114 45	17	22 52 44 32	2 58 14 9	129 43
18	21 27 21 43	12 37 27 0	114 93	18	22 54 31 89	2 45 18 3	129 58
19	21 29 13 22	12 25 57 4	115 40	19	22 56 19 46	2 32 20 8	129 73
20	21 31 4 84	12 14 25 0	115 85	20	22 58 7 04	2 19 22 4	129 88
21	21 32 56 28	12 2 49 9	116 30	21	22 59 54 63	2 6 23 1	130 00
22	21 34 47 55	11 51 12 1	116 73	22	23 1 42 25	1 53 23 1	130 13
23	21 36 38 65	11 39 31 7	117 17	23	23 3 29 88	1 40 22 3	130 25
24	21 38 29 59	S. 11 27 48 7		24	23 5 17 54	S. 1 27 20 8	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
THURSDAY 5.				SATURDAY 7.			
	^h ^m ^s	^o ⁱ ^u	^w		^h ^m ^s	^o ⁱ ^u	^w
0	23 5 17.54	S. 1 27 20.8	130.37	0	0 33 17.77	N. 8 58 3.6	127.75
1	23 7 5.23	1 14 18.6	130.48	1	0 35 11.79	9 10 46.5	126.38
2	23 8 52.96	1 1 15.7	130.57	2	0 37 6.05	9 23 27.8	126.60
3	23 10 40.73	0 48 12.3	130.67	3	0 39 0.54	9 36 7.4	126.32
4	23 12 28.53	0 35 8.3	130.75	4	0 40 55.27	9 48 45.3	126.32
5	23 14 16.39	0 22 3.8	130.83	5	0 42 50.24	10 1 21.4	125.70
6	23 16 4.30	S. 0 8 58.8	130.92	6	0 44 45.46	10 13 55.6	125.38
7	23 17 52.26	N. 0 4 6.7	130.97	7	0 46 40.93	10 26 27.9	125.07
8	23 19 40.28	0 17 12.5	131.03	8	0 48 36.65	10 38 58.3	124.70
9	23 21 28.37	0 30 18.7	131.08	9	0 50 32.63	10 51 26.5	124.37
10	23 23 16.52	0 43 25.2	131.13	10	0 52 28.87	11 3 52.7	124.02
11	23 25 4.75	0 56 32.0	131.17	11	0 54 25.38	11 16 16.8	123.63
12	23 26 53.05	1 9 39.0	131.20	12	0 56 22.16	11 28 38.6	123.25
13	23 28 41.44	1 22 46.2	131.22	13	0 58 19.21	11 40 58.1	122.87
14	23 30 29.91	1 35 53.5	131.23	14	1 0 16.53	11 53 15.3	122.47
15	23 32 18.46	1 49 0.9	131.25	15	1 2 14.14	12 5 30.1	122.05
16	23 34 7.12	2 2 8.4	131.25	16	1 4 12.02	12 17 42.4	121.63
17	23 35 55.87	2 15 15.9	131.25	17	1 6 10.20	12 29 52.2	121.20
18	23 37 44.72	2 28 23.4	131.23	18	1 8 8.66	12 41 59.4	120.78
19	23 39 33.68	2 41 30.8	131.22	19	1 10 7.42	12 54 3.8	120.39
20	23 41 22.74	2 54 38.1	131.19	20	1 12 6.48	13 6 5.6	119.92
21	23 43 11.92	3 7 45.2	131.15	21	1 14 5.83	13 18 4.6	119.38
22	23 45 1.22	3 20 52.1	131.12	22	1 16 5.49	13 30 0.6	118.87
23	23 46 50.64	N. 3 33 58.8	131.07	23	1 18 5.46	N.13 41 53.8	118.35
FRIDAY 6.				SUNDAY 8.			
	^h ^m ^s	^o ⁱ ^u	^w		^h ^m ^s	^o ⁱ ^u	^w
0	23 48 40.18	N. 3 47 5.2	131.00	0	1 20 5.73	N.13 53 43.9	117.83
1	23 50 29.86	4 0 11.2	130.95	1	1 22 6.32	14 5 30.9	117.32
2	23 52 19.67	4 13 16.9	130.88	2	1 24 7.22	14 17 14.8	116.78
3	23 54 9.61	4 26 22.2	130.78	3	1 26 8.44	14 28 55.5	116.23
4	23 55 59.70	4 39 26.9	130.70	4	1 28 9.99	14 40 32.9	115.68
5	23 57 49.94	4 52 31.1	130.62	5	1 30 11.86	14 52 7.0	115.10
6	23 59 40.33	5 5 34.8	130.50	6	1 32 14.06	15 3 37.6	114.52
7	0 1 30.87	5 18 37.8	130.38	7	1 34 16.58	15 15 4.7	113.92
8	0 3 21.57	5 31 40.1	130.27	8	1 36 19.44	15 26 28.2	113.32
9	0 5 12.44	5 44 41.7	130.13	9	1 38 22.64	15 37 48.1	112.70
10	0 7 3.47	5 57 42.5	130.00	10	1 40 26.18	15 49 4.8	112.07
11	0 8 54.68	6 10 42.5	129.87	11	1 42 30.05	16 0 16.7	111.48
12	0 10 46.05	6 23 41.7	129.70	12	1 44 34.27	16 11 25.2	110.77
13	0 12 37.61	6 36 39.9	129.53	13	1 46 38.84	16 22 29.8	110.10
14	0 14 29.35	6 49 37.1	129.38	14	1 48 43.75	16 33 30.4	109.42
15	0 16 21.29	7 2 33.2	129.18	15	1 50 49.01	16 44 26.9	108.72
16	0 18 13.41	7 15 28.3	129.00	16	1 52 54.63	16 55 19.2	108.02
17	0 20 5.73	7 28 22.3	128.78	17	1 55 0.60	17 6 7.8	107.28
18	0 21 58.25	7 41 15.0	128.60	18	1 57 6.93	17 16 51.0	106.57
19	0 23 50.97	7 54 6.6	128.37	19	1 59 13.63	17 27 30.4	105.82
20	0 25 43.90	8 6 56.8	128.13	20	2 1 20.68	17 38 5.3	105.05
21	0 27 37.04	8 19 45.6	127.92	21	2 3 28.10	17 48 35.6	104.30
22	0 29 30.40	8 32 33.1	127.67	22	2 5 35.88	17 59 1.4	103.50
23	0 31 23.97	8 45 1.1	127.42	23	2 7 44.03	18 9 22.4	102.79

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Dif. Dec. for 10".	Hour.	Right Ascension.	Declination.	Dif. Dec. for 10".
<i>MONDAY 9.</i>				<i>WEDNESDAY 11.</i>			
0	2 9 52 ^{h m s} .55	N.18 19 38 ^{o ' "} .6	101 ["] .90	0	3 59 56 ^{h m s} .93	N.24 32 34 ^{o ' "} .3	47 ["] .33
1	2 12 1 ^{h m s} .44	18 29 50 ^{o ' "} .0	101 ["] .07	1	4 2 22 ^{h m s} .97	24 37 18 ^{o ' "} .3	45 ["] .90
2	2 14 10 ^{h m s} .70	18 39 56 ^{o ' "} .4	100 ["] .23	2	4 4 49 ^{h m s} .30	24 41 53 ^{o ' "} .7	44 ["] .45
3	2 16 20 ^{h m s} .33	18 49 57 ^{o ' "} .8	99 ["] .38	3	4 7 15 ^{h m s} .91	24 46 20 ^{o ' "} .4	42 ["] .98
4	2 18 30 ^{h m s} .33	18 59 54 ^{o ' "} .1	98 ["] .82	4	4 9 42 ^{h m s} .81	24 50 38 ^{o ' "} .3	41 ["] .80
5	2 20 40 ^{h m s} .71	19 9 45 ^{o ' "} .2	97 ["] .63	5	4 12 9 ^{h m s} .97	24 54 47 ^{o ' "} .3	40 ["] .03
6	2 22 51 ^{h m s} .47	19 19 31 ^{o ' "} .0	96 ["] .75	6	4 14 37 ^{h m s} .41	24 58 47 ^{o ' "} .5	38 ["] .53
7	2 25 2 ^{h m s} .60	19 29 11 ^{o ' "} .5	95 ["] .85	7	4 17 5 ^{h m s} .10	25 2 38 ^{o ' "} .7	37 ["] .05
8	2 27 14 ^{h m s} .11	19 38 46 ^{o ' "} .6	94 ["] .92	8	4 19 33 ^{h m s} .05	25 6 21 ^{o ' "} .0	35 ["] .53
9	2 29 26 ^{h m s} .00	19 48 16 ^{o ' "} .1	94 ["] .00	9	4 22 1 ^{h m s} .25	25 9 54 ^{o ' "} .2	34 ["] .00
10	2 31 38 ^{h m s} .26	19 57 40 ^{o ' "} .1	93 ["] .03	10	4 24 29 ^{h m s} .70	25 13 18 ^{o ' "} .2	32 ["] .48
11	2 33 50 ^{h m s} .90	20 6 58 ^{o ' "} .3	92 ["] .10	11	4 26 58 ^{h m s} .38	25 16 33 ^{o ' "} .1	30 ["] .95
12	2 36 3 ^{h m s} .93	20 16 10 ^{o ' "} .9	91 ["] .12	12	4 29 27 ^{h m s} .30	25 19 38 ^{o ' "} .8	29 ["] .40
13	2 38 17 ^{h m s} .33	20 25 17 ^{o ' "} .6	90 ["] .13	13	4 31 56 ^{h m s} .44	25 22 35 ^{o ' "} .2	27 ["] .85
14	2 40 31 ^{h m s} .11	20 34 18 ^{o ' "} .4	89 ["] .13	14	4 34 25 ^{h m s} .80	25 25 22 ^{o ' "} .3	26 ["] .28
15	2 42 45 ^{h m s} .27	20 43 13 ^{o ' "} .2	88 ["] .12	15	4 36 55 ^{h m s} .37	25 28 0 ^{o ' "} .0	24 ["] .72
16	2 44 59 ^{h m s} .81	20 52 1 ^{o ' "} .9	87 ["] .08	16	4 39 25 ^{h m s} .15	25 30 28 ^{o ' "} .3	23 ["] .13
17	2 47 14 ^{h m s} .73	21 0 44 ^{o ' "} .4	86 ["] .05	17	4 41 55 ^{h m s} .13	25 32 47 ^{o ' "} .1	21 ["] .57
18	2 49 30 ^{h m s} .02	21 9 20 ^{o ' "} .7	85 ["] .00	18	4 44 25 ^{h m s} .29	25 34 56 ^{o ' "} .5	19 ["] .97
19	2 51 45 ^{h m s} .69	21 17 50 ^{o ' "} .7	83 ["] .93	19	4 46 55 ^{h m s} .64	25 36 56 ^{o ' "} .3	18 ["] .37
20	2 54 1 ^{h m s} .74	21 26 14 ^{o ' "} .3	82 ["] .83	20	4 49 26 ^{h m s} .17	25 38 46 ^{o ' "} .5	16 ["] .78
21	2 56 18 ^{h m s} .17	21 34 31 ^{o ' "} .3	81 ["] .77	21	4 51 56 ^{h m s} .86	25 40 27 ^{o ' "} .2	15 ["] .17
22	2 58 34 ^{h m s} .97	21 42 41 ^{o ' "} .9	80 ["] .63	22	4 54 27 ^{h m s} .72	25 41 58 ^{o ' "} .2	13 ["] .55
23	3 0 52 ^{h m s} .14	N.21 50 45 ^{o ' "} .7	79 ["] .53	23	4 56 58 ^{h m s} .73	N.25 43 19 ^{o ' "} .5	11 ["] .93
<i>TUESDAY 10.</i>				<i>THURSDAY 12.</i>			
0	3 3 9 ^{h m s} .69	N.21 58 42 ^{o ' "} .9	78 ["] .40	0	4 59 29 ^{h m s} .89	N.25 44 31 ^{o ' "} .1	10 ["] .32
1	3 5 27 ^{h m s} .61	22 6 33 ^{o ' "} .3	77 ["] .23	1	5 2 1 ^{h m s} .19	25 45 33 ^{o ' "} .0	8 ["] .68
2	3 7 45 ^{h m s} .90	22 14 16 ^{o ' "} .7	76 ["] .08	2	5 4 32 ^{h m s} .63	25 46 25 ^{o ' "} .1	7 ["] .05
3	3 10 4 ^{h m s} .56	22 21 53 ^{o ' "} .2	74 ["] .92	3	5 7 4 ^{h m s} .18	25 47 7 ^{o ' "} .4	5 ["] .40
4	3 12 23 ^{h m s} .58	22 29 22 ^{o ' "} .7	73 ["] .73	4	5 9 35 ^{h m s} .86	25 47 39 ^{o ' "} .8	3 ["] .78
5	3 14 42 ^{h m s} .97	22 36 45 ^{o ' "} .1	72 ["] .52	5	5 12 7 ^{h m s} .64	25 48 2 ^{o ' "} .5	2 ["] .13
6	3 17 2 ^{h m s} .72	22 44 0 ^{o ' "} .2	71 ["] .30	6	5 14 39 ^{h m s} .53	25 48 15 ^{o ' "} .3	0 ["] .47
7	3 19 28 ^{h m s} .83	22 51 8 ^{o ' "} .0	70 ["] .08	7	5 17 11 ^{h m s} .51	25 48 18 ^{o ' "} .1	1 ["] .17
8	3 21 43 ^{h m s} .30	22 58 8 ^{o ' "} .5	68 ["] .85	8	5 19 43 ^{h m s} .57	25 48 11 ^{o ' "} .1	2 ["] .82
9	3 24 4 ^{h m s} .18	23 5 1 ^{o ' "} .6	67 ["] .58	9	5 22 15 ^{h m s} .71	25 47 54 ^{o ' "} .2	4 ["] .48
10	3 26 25 ^{h m s} .30	23 11 47 ^{o ' "} .1	66 ["] .23	10	5 24 47 ^{h m s} .93	25 47 27 ^{o ' "} .3	6 ["] .13
11	3 28 46 ^{h m s} .83	23 18 25 ^{o ' "} .1	65 ["] .05	11	5 27 20 ^{h m s} .20	25 46 50 ^{o ' "} .5	7 ["] .78
12	3 31 8 ^{h m s} .70	23 24 55 ^{o ' "} .4	63 ["] .77	12	5 29 52 ^{h m s} .53	25 46 3 ^{o ' "} .8	9 ["] .45
13	3 33 30 ^{h m s} .92	23 31 18 ^{o ' "} .0	62 ["] .45	13	5 32 24 ^{h m s} .91	25 45 7 ^{o ' "} .1	11 ["] .12
14	3 35 53 ^{h m s} .48	23 37 32 ^{o ' "} .7	61 ["] .15	14	5 34 57 ^{h m s} .32	25 44 0 ^{o ' "} .4	12 ["] .78
15	3 38 16 ^{h m s} .37	23 43 39 ^{o ' "} .6	59 ["] .80	15	5 37 29 ^{h m s} .77	25 42 43 ^{o ' "} .7	14 ["] .43
16	3 40 39 ^{h m s} .60	23 49 38 ^{o ' "} .4	58 ["] .48	16	5 40 2 ^{h m s} .23	25 41 17 ^{o ' "} .1	16 ["] .10
17	3 43 3 ^{h m s} .16	23 55 29 ^{o ' "} .3	57 ["] .12	17	5 42 34 ^{h m s} .71	25 39 40 ^{o ' "} .5	17 ["] .77
18	3 45 27 ^{h m s} .04	24 1 12 ^{o ' "} .0	55 ["] .77	18	5 45 7 ^{h m s} .20	25 37 53 ^{o ' "} .9	19 ["] .43
19	3 47 51 ^{h m s} .24	24 6 46 ^{o ' "} .6	54 ["] .38	19	5 47 39 ^{h m s} .69	25 35 57 ^{o ' "} .3	21 ["] .08
20	3 50 15 ^{h m s} .77	24 12 12 ^{o ' "} .9		20	5 50 12 ^{h m s} .17	25 33 50 ^{o ' "} .8	22 ["] .75
21	3 52 40 ^{h m s} .60	24 17 30 ^{o ' "} .3		21	5 52 44 ^{h m s} .63	25 31 34 ^{o ' "} .3	24 ["] .40
22	3 55 5 ^{h m s} .74	24 22 40 ^{o ' "} .7		22	5 55 17 ^{h m s} .07	25 29 7 ^{o ' "} .9	26 ["] .07
23	3 57 31 ^{h m s} .19	24 27 41 ^{o ' "} .7		23	5 57 50 ^{h m s} .51	25 26 31 ^{o ' "} .5	27 ["] .72
24	3 59 56 ^{h m s} .93	N.24 32 34 ^{o ' "} .3		24	6 0 23 ^{h m s} .95	N.25 23 45 ^{o ' "} .2	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Dif. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Dif. Dec. for 10 ^m .
<i>FRIDAY 13.</i>				<i>SUNDAY 15.</i>			
0	6 0 21 ^h 83 ^m	N. 25 23 45 ^o 2 ⁱ	29 ^u 37 ⁿ	0	7 59 25 ^h 46 ^m	N. 20 7 25 ^o 1 ⁱ	100 ^u 50 ⁿ
1	6 2 54 ^h 17 ^m	25 20 49 ^o 0 ⁱ	31 ^u 03 ⁿ	1	8 1 48 ^h 83 ^m	19 57 22 ^o 1 ⁱ	101 ^u 72 ⁿ
2	6 5 26 ^h 44 ^m	25 17 42 ^o 8 ⁱ	32 ^u 65 ⁿ	2	8 4 11 ^h 93 ^m	19 47 11 ^o 8 ⁱ	102 ^u 92 ⁿ
3	6 7 58 ^h 65 ^m	25 14 26 ^o 9 ⁱ	34 ^u 32 ⁿ	3	8 6 34 ^h 76 ^m	19 36 54 ^o 3 ⁱ	104 ^u 13 ⁿ
4	6 10 30 ^h 79 ^m	25 11 1 ^o 0 ⁱ	35 ^u 98 ⁿ	4	8 8 57 ^h 32 ^m	19 26 29 ^o 5 ⁱ	105 ^u 32 ⁿ
5	6 13 2 ^h 85 ^m	25 7 25 ^o 3 ⁱ	37 ^u 58 ⁿ	5	8 11 19 ^h 61 ^m	19 15 57 ^o 6 ⁱ	106 ^u 48 ⁿ
6	6 15 34 ^h 83 ^m	25 3 39 ^o 8 ⁱ	39 ^u 20 ⁿ	6	8 13 41 ^h 63 ^m	19 5 18 ^o 7 ⁱ	107 ^u 63 ⁿ
7	6 18 6 ^h 72 ^m	24 59 44 ^o 6 ⁱ	40 ^u 85 ⁿ	7	8 16 3 ^h 37 ^m	18 54 32 ^o 9 ⁱ	108 ^u 78 ⁿ
8	6 20 38 ^h 51 ^m	24 55 39 ^o 5 ⁱ	42 ^u 45 ⁿ	8	8 18 24 ^h 84 ^m	18 43 40 ^o 2 ⁱ	109 ^u 92 ⁿ
9	6 23 10 ^h 20 ^m	24 51 24 ^o 8 ⁱ	44 ^u 08 ⁿ	9	8 20 46 ^h 04 ^m	18 32 40 ^o 7 ⁱ	111 ^u 02 ⁿ
10	6 25 41 ^h 78 ^m	24 47 0 ^o 3 ⁱ	45 ^u 68 ⁿ	10	8 23 6 ^h 97 ^m	18 21 34 ^o 6 ⁱ	112 ^u 15 ⁿ
11	6 28 13 ^h 24 ^m	24 42 26 ^o 2 ⁱ	47 ^u 28 ⁿ	11	8 25 27 ^h 63 ^m	18 10 21 ^o 7 ⁱ	113 ^u 22 ⁿ
12	6 30 44 ^h 57 ^m	24 37 42 ^o 5 ⁱ	48 ^u 88 ⁿ	12	8 27 48 ^h 01 ^m	17 59 2 ^o 4 ⁱ	114 ^u 30 ⁿ
13	6 33 15 ^h 78 ^m	24 32 49 ^o 2 ⁱ	50 ^u 48 ⁿ	13	8 30 8 ^h 12 ^m	17 47 36 ^o 6 ⁱ	115 ^u 37 ⁿ
14	6 35 46 ^h 84 ^m	24 27 46 ^o 3 ⁱ	52 ^u 07 ⁿ	14	8 32 27 ^h 96 ^m	17 36 4 ^o 4 ⁱ	116 ^u 42 ⁿ
15	6 38 17 ^h 77 ^m	24 22 33 ^o 9 ⁱ	53 ^u 63 ⁿ	15	8 34 47 ^h 53 ^m	17 24 25 ^o 9 ⁱ	117 ^u 43 ⁿ
16	6 40 48 ^h 54 ^m	24 17 12 ^o 1 ⁱ	55 ^u 22 ⁿ	16	8 37 6 ^h 84 ^m	17 12 41 ^o 3 ⁱ	118 ^u 47 ⁿ
17	6 43 19 ^h 16 ^m	24 11 40 ^o 8 ⁱ	56 ^u 78 ⁿ	17	8 39 25 ^h 87 ^m	17 0 50 ^o 5 ⁱ	119 ^u 47 ⁿ
18	6 45 49 ^h 62 ^m	24 6 0 ^o 1 ⁱ	58 ^u 33 ⁿ	18	8 41 44 ^h 64 ^m	16 48 53 ^o 7 ⁱ	120 ^u 47 ⁿ
19	6 48 19 ^h 91 ^m	23 0 10 ^o 1 ⁱ	59 ^u 88 ⁿ	19	8 44 3 ^h 14 ^m	16 36 50 ^o 9 ⁱ	121 ^u 45 ⁿ
20	6 50 50 ^h 03 ^m	23 54 10 ^o 8 ⁱ	61 ^u 43 ⁿ	20	8 46 21 ^h 38 ^m	16 24 42 ^o 2 ⁱ	122 ^u 40 ⁿ
21	6 53 19 ^h 97 ^m	23 48 2 ^o 2 ⁱ	62 ^u 97 ⁿ	21	8 48 39 ^h 35 ^m	16 12 27 ^o 8 ⁱ	123 ^u 35 ⁿ
22	6 55 49 ^h 73 ^m	23 41 44 ^o 4 ⁱ	64 ^u 48 ⁿ	22	8 50 57 ^h 07 ^m	16 0 7 ^o 7 ⁱ	124 ^u 28 ⁿ
23	6 58 19 ^h 30 ^m	N. 23 35 17 ^o 5 ⁱ	66 ^u 00 ⁿ	23	8 53 14 ^h 52 ^m	N. 15 47 42 ^o 0 ⁱ	125 ^u 22 ⁿ
<i>SATURDAY 14.</i>				<i>MONDAY 16.</i>			
0	7 0 48 ^h 68 ^m	N. 23 28 41 ^o 5 ⁱ	67 ^u 52 ⁿ	0	8 55 31 ^h 72 ^m	N. 15 35 10 ^o 7 ⁱ	126 ^u 12 ⁿ
1	7 3 17 ^h 86 ^m	23 21 56 ^o 4 ⁱ	69 ^u 00 ⁿ	1	8 57 48 ^h 66 ^m	15 22 34 ^o 0 ⁱ	127 ^u 00 ⁿ
2	7 5 46 ^h 83 ^m	23 15 2 ^o 4 ⁱ	70 ^u 50 ⁿ	2	9 0 5 ^h 35 ^m	15 9 52 ^o 0 ⁱ	127 ^u 88 ⁿ
3	7 8 15 ^h 60 ^m	23 7 59 ^o 4 ⁱ	71 ^u 98 ⁿ	3	9 2 21 ^h 78 ^m	14 57 4 ^o 7 ⁱ	128 ^u 75 ⁿ
4	7 10 44 ^h 16 ^m	23 0 47 ^o 5 ⁱ	73 ^u 43 ⁿ	4	9 4 37 ^h 97 ^m	14 44 12 ^o 2 ⁱ	129 ^u 60 ⁿ
5	7 13 12 ^h 50 ^m	22 53 26 ^o 9 ⁱ	74 ^u 92 ⁿ	5	9 6 53 ^h 91 ^m	14 31 14 ^o 6 ⁱ	130 ^u 43 ⁿ
6	7 15 40 ^h 62 ^m	22 45 57 ^o 4 ⁱ	76 ^u 38 ⁿ	6	9 9 9 ^h 60 ^m	14 18 12 ^o 0 ⁱ	131 ^u 25 ⁿ
7	7 18 8 ^h 51 ^m	22 38 19 ^o 3 ⁱ	77 ^u 80 ⁿ	7	9 11 25 ^h 05 ^m	14 5 4 ^o 5 ⁱ	132 ^u 07 ⁿ
8	7 20 36 ^h 19 ^m	22 30 32 ^o 5 ⁱ	79 ^u 22 ⁿ	8	9 13 40 ^h 26 ^m	13 51 52 ^o 1 ⁱ	132 ^u 85 ⁿ
9	7 23 3 ^h 63 ^m	22 22 37 ^o 2 ⁱ	80 ^u 63 ⁿ	9	9 15 55 ^h 24 ^m	13 38 35 ^o 0 ⁱ	133 ^u 63 ⁿ
10	7 25 30 ^h 83 ^m	22 14 33 ^o 4 ⁱ	82 ^u 05 ⁿ	10	9 18 9 ^h 98 ^m	13 25 13 ^o 2 ⁱ	134 ^u 38 ⁿ
11	7 27 57 ^h 79 ^m	22 6 21 ^o 1 ⁱ	83 ^u 48 ⁿ	11	9 20 24 ^h 48 ^m	13 11 46 ^o 9 ⁱ	135 ^u 15 ⁿ
12	7 30 24 ^h 51 ^m	21 58 0 ^o 4 ⁱ	84 ^u 83 ⁿ	12	9 22 38 ^h 75 ^m	12 58 16 ^o 0 ⁱ	135 ^u 88 ⁿ
13	7 32 50 ^h 99 ^m	21 49 31 ^o 4 ⁱ	86 ^u 20 ⁿ	13	9 24 52 ^h 80 ^m	12 44 40 ^o 7 ⁱ	136 ^u 58 ⁿ
14	7 35 17 ^h 23 ^m	21 40 54 ^o 2 ⁱ	87 ^u 55 ⁿ	14	9 27 6 ^h 63 ^m	12 31 1 ^o 2 ⁱ	137 ^u 30 ⁿ
15	7 37 43 ^h 21 ^m	21 32 8 ^o 9 ⁱ	88 ^u 93 ⁿ	15	9 29 20 ^h 25 ^m	12 17 17 ^o 4 ⁱ	138 ^u 00 ⁿ
16	7 40 8 ^h 94 ^m	21 23 15 ^o 4 ⁱ	90 ^u 25 ⁿ	16	9 31 33 ^h 64 ^m	12 3 29 ^o 4 ⁱ	138 ^u 67 ⁿ
17	7 42 34 ^h 42 ^m	21 14 13 ^o 9 ⁱ	91 ^u 57 ⁿ	17	9 33 46 ^h 82 ^m	11 49 37 ^o 4 ⁱ	139 ^u 33 ⁿ
18	7 44 59 ^h 64 ^m	21 5 4 ^o 5 ⁱ	92 ^u 88 ⁿ	18	9 35 59 ^h 80 ^m	11 35 41 ^o 4 ⁱ	139 ^u 98 ⁿ
19	7 47 24 ^h 60 ^m	20 55 47 ^o 2 ⁱ	94 ^u 18 ⁿ	19	9 38 12 ^h 56 ^m	11 21 41 ^o 5 ⁱ	140 ^u 62 ⁿ
20	7 49 49 ^h 31 ^m	20 46 22 ^o 1 ⁱ	95 ^u 48 ⁿ	20	9 40 25 ^h 13 ^m	11 7 37 ^o 8 ⁱ	141 ^u 28 ⁿ
21	7 52 13 ^h 74 ^m	20 36 49 ^o 2 ⁱ	96 ^u 75 ⁿ	21	9 42 37 ^h 49 ^m	10 53 30 ^o 4 ⁱ	141 ^u 85 ⁿ
22	7 54 37 ^h 92 ^m	20 27 8 ^o 7 ⁱ	98 ^u 00 ⁿ	22	9 44 49 ^h 66 ^m	10 39 19 ^o 3 ⁱ	142 ^u 42 ⁿ
23	7 57 1 ^h 83 ^m	20 17 20 ^o 7 ⁱ	99 ^u 27 ⁿ	23	9 47 1 ^h 64 ^m	10 25 4 ^o 8 ⁱ	142 ^u 02 ⁿ

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .
TUESDAY 17.				THURSDAY 19.			
0	9 49 13.43	N. 10 10 46.7	143.57	0	11 32 19.71	S. 1 55 35.8	152.98
1	9 51 25.04	9 56 25.3	144.13	1	11 34 27.49	2 10 59.1	152.75
2	9 53 36.46	9 42 0.5	144.65	2	11 36 35.31	2 26 21.6	152.60
3	9 55 47.71	9 27 32.6	145.17	3	11 38 43.16	2 41 43.2	152.45
4	9 57 58.79	9 13 1.6	145.68	4	11 40 51.05	2 57 3.9	152.28
5	10 0 9.69	8 58 27.5	146.17	5	11 42 58.99	3 12 23.6	152.08
6	10 2 20.43	8 43 50.5	146.65	6	11 45 6.97	3 27 49.1	152.83
7	10 4 31.01	8 29 10.6	147.10	7	11 47 15.00	3 42 59.4	152.68
8	10 6 41.44	8 14 28.0	147.57	8	11 49 23.10	3 58 15.5	152.43
9	10 8 51.71	7 59 42.6	147.98	9	11 51 31.25	4 13 30.1	152.20
10	10 11 1.83	7 44 54.7	148.40	10	11 53 39.47	4 28 43.3	151.95
11	10 13 11.80	7 30 4.3	148.82	11	11 55 47.76	4 43 55.0	151.67
12	10 15 21.64	7 15 11.4	149.20	12	11 57 56.12	4 59 5.0	151.28
13	10 17 31.34	7 0 16.2	149.58	13	12 0 4.56	5 14 13.3	151.08
14	10 19 40.91	6 45 18.7	149.93	14	12 2 13.09	5 29 19.8	149.77
15	10 21 50.35	6 30 19.1	150.28	15	12 4 21.70	5 44 24.4	150.45
16	10 23 59.67	6 15 17.4	150.62	16	12 6 30.40	5 59 27.1	150.10
17	10 26 8.87	6 0 13.7	150.95	17	12 8 39.20	6 14 27.7	149.78
18	10 28 17.95	5 45 8.0	151.28	18	12 10 48.10	6 29 26.1	149.37
19	10 30 26.98	5 30 0.5	151.58	19	12 12 57.10	6 44 23.3	149.00
20	10 32 35.79	5 14 51.3	151.82	20	12 15 6.21	6 59 16.3	148.58
21	10 34 44.56	4 59 40.4	152.08	21	12 17 15.43	7 14 7.8	148.18
22	10 36 53.23	4 44 27.9	152.32	22	12 19 24.77	7 28 56.9	147.72
23	10 39 1.81	N. 4 29 13.9	152.57	23	12 21 34.22	S. 7 43 43.3	147.22
WEDNESDAY 18.				FRIDAY 20.			
0	10 41 19.31	N. 4 13 58.5	152.80	0	12 23 43.79	S. 7 58 27.2	146.85
1	10 43 18.72	3 58 41.7	152.98	1	12 25 53.49	8 13 8.3	146.40
2	10 45 27.05	3 43 23.8	153.20	2	12 28 3.32	8 27 46.7	145.90
3	10 47 35.30	3 28 4.6	153.37	3	12 30 13.28	8 42 23.1	145.40
4	10 49 43.49	3 13 44.4	153.55	4	12 32 23.37	8 56 54.5	144.88
5	10 51 51.61	2 57 23.1	153.68	5	12 34 33.61	9 11 23.8	144.37
6	10 53 59.67	2 42 1.0	153.83	6	12 36 43.99	9 25 50.0	143.83
7	10 56 7.68	2 26 38.0	153.93	7	12 38 54.52	9 40 13.0	143.27
8	10 58 15.68	2 11 14.4	154.07	8	12 41 5.20	9 54 33.6	142.70
9	11 0 23.54	1 55 50.0	154.15	9	12 43 16.04	10 8 48.8	142.12
10	11 2 31.41	1 40 25.1	154.23	10	12 45 27.03	10 23 1.5	141.52
11	11 4 39.23	1 24 59.7	154.30	11	12 47 38.18	10 37 10.6	140.90
12	11 6 47.03	1 9 33.9	154.35	12	12 49 49.48	10 51 16.0	140.28
13	11 8 54.80	0 54 7.8	154.38	13	12 52 0.96	11 5 17.7	139.63
14	11 11 2.54	0 38 41.5	154.42	14	12 54 12.61	11 19 15.5	138.98
15	11 13 10.27	0 23 15.0	154.42	15	12 56 24.42	11 33 9.4	138.30
16	11 15 17.98	N. 0 7 48.5	154.42	16	12 58 36.48	11 46 59.2	137.63
17	11 17 25.69	S. 0 7 38.0	154.40	17	13 0 48.59	12 0 45.0	136.93
18	11 19 33.38	0 23 4.4	154.37	18	13 3 0.95	12 14 26.6	136.22
19	11 21 41.08	0 38 30.6	154.33	19	13 5 13.48	12 28 3.9	135.50
20	11 23 48.78	0 53 56.6	154.28	20	13 7 26.21	12 41 36.9	134.77
21	11 25 56.49	1 9 22.1	154.18	21	13 9 39.11	12 55 5.5	134.00
22	11 28 4.21	1 24 47.2	154.10	22	13 11 52.21	13 8 29.5	133.28
23	11 30 11.95	1 40 11.8	154.00	23	13 14 5.50	13 21 48.9	132.447
24	11 32 19.71	S. 1 55 35.8		24	13 16 18.99	S. 13 35 3.7	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>SATURDAY 21.</i>				<i>MONDAY 23.</i>			
0	13 16 18 ^{h m s} 99	S. 13 25 3 ^o 7 ⁿ	131 ⁿ 67	0	15 7 11 ^{h m s} 61	S. 22 13 7 ^o 4 ⁿ	78 ⁿ 47
1	13 18 32 67	13 48 13 7	130 87	1	15 9 35 07	22 20 58 2	77 08
2	13 20 46 55	14 1 18 9	130 05	2	15 11 58 70	22 28 40 7	75 70
3	13 23 0 63	14 14 19 2	129 20	3	15 14 22 48	22 36 14 9	74 20
4	13 25 14 91	14 27 14 4	128 35	4	15 16 46 41	22 43 40 7	72 30
5	13 27 29 40	14 40 4 5	127 50	5	15 19 10 59	22 50 58 1	71 48
6	13 29 44 09	14 52 49 5	126 60	6	15 21 34 73	22 58 7 0	70 08
7	13 31 58 99	15 5 29 1	125 78	7	15 23 59 11	23 5 7 5	68 68
8	13 34 14 09	15 18 3 5	124 82	8	15 26 23 62	23 11 59 4	67 22
9	13 36 29 41	15 30 32 4	123 90	9	15 28 48 26	23 18 42 7	65 77
10	13 38 44 94	15 42 55 8	122 97	10	15 31 13 03	23 25 17 3	64 22
11	13 41 0 67	15 55 13 6	122 02	11	15 33 37 92	23 31 43 3	62 38
12	13 43 16 63	16 7 25 7	121 05	12	15 36 2 94	23 38 0 6	61 42
13	13 45 32 79	16 19 32 0	120 10	13	15 38 28 06	23 44 9 1	59 95
14	13 47 49 17	16 31 32 6	119 08	14	15 40 53 30	23 50 8 8	58 48
15	13 50 5 76	16 43 27 1	118 10	15	15 43 18 63	23 55 59 7	57 02
16	13 52 22 57	16 55 15 7	117 10	16	15 45 44 06	24 1 41 8	55 53
17	13 54 39 60	17 6 58 3	116 07	17	15 48 9 58	24 7 15 0	54 03
18	13 56 56 84	17 18 34 7	115 02	18	15 50 35 19	24 12 39 2	52 58
19	13 59 14 30	17 30 4 8	113 98	19	15 53 0 88	24 17 54 5	51 07
20	14 1 31 98	17 41 28 7	112 92	20	15 55 26 65	24 23 0 9	49 55
21	14 3 49 87	17 52 46 2	111 83	21	15 57 52 48	24 27 58 2	48 08
22	14 6 7 98	18 3 57 2	110 75	22	16 0 18 38	24 32 46 5	46 55
23	14 8 26 30	S. 18 15 1 7	109 65	23	16 2 44 34	S. 24 37 25 8	45 02
<i>SUNDAY 22.</i>				<i>TUESDAY 24.</i>			
0	14 10 44 85	S. 18 25 59 6	108 55	0	16 5 10 34	S. 24 41 56 0	42 52
1	14 13 3 61	18 36 50 9	107 42	1	16 7 36 40	24 46 17 1	42 02
2	14 15 22 59	18 47 35 4	106 28	2	16 10 2 50	24 50 29 2	40 48
3	14 17 41 78	18 58 13 1	105 13	3	16 12 28 64	24 54 32 1	39 37
4	14 20 1 19	19 8 43 9	103 97	4	16 14 54 80	24 58 25 9	37 42
5	14 22 20 81	19 19 7 7	102 80	5	16 17 20 98	25 2 10 5	35 32
6	14 24 40 64	19 29 24 5	101 62	6	16 19 47 18	25 5 46 0	34 28
7	14 27 0 68	19 39 34 2	100 42	7	16 22 13 39	25 9 12 3	32 47
8	14 29 20 92	19 49 36 7	99 20	8	16 24 39 61	25 12 29 5	31 22
9	14 31 41 38	19 59 31 9	98 00	9	16 27 5 82	25 15 37 4	29 30
10	14 34 2 04	20 9 19 9	96 77	10	16 29 32 01	25 18 36 2	28 27
11	14 36 22 90	20 19 0 5	95 52	11	16 31 58 20	25 21 25 8	26 73
12	14 38 43 96	20 28 33 6	94 27	12	16 34 24 36	25 24 6 2	25 20
13	14 41 5 23	20 37 59 2	93 00	13	16 36 50 49	25 26 37 4	23 67
14	14 43 26 69	20 47 17 2	91 72	14	16 39 16 59	25 28 59 4	22 12
15	14 45 48 35	20 56 27 6	90 45	15	16 41 42 64	25 31 12 2	20 62
16	14 48 10 20	21 5 30 3	89 15	16	16 44 8 65	25 33 15 9	19 08
17	14 50 32 24	21 14 25 2	87 85	17	16 46 34 59	25 35 10 4	17 55
18	14 52 54 47	21 23 18 3	86 53	18	16 49 0 48	25 36 55 7	16 02
19	14 55 16 88	21 31 51 5	85 22	19	16 51 26 30	25 38 31 8	14 50
20	14 57 39 47	21 40 22 8	83 39	20	16 53 52 04	25 39 58 8	12 92
21	15 0 2 25	21 48 46 1	82 53	21	16 56 17 70	25 41 16 7	11 45
22	15 2 25 22	21 57 1 3	81 18	22	16 58 43 27	25 42 25 4	9 95
23	15 4 41	22 5 8 4	79 28	23	17 1 8 75	25 43 25 1	8 42

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>WEDNESDAY 25.</i>				<i>FRIDAY 27.</i>			
0	17 3 34.13	S. 25 44 15.6	6.92	0	18 56 1.99	S. 23 37 14.9	58.20
1	17 5 59.40	25 44 57.1	5.40	1	18 58 15.94	23 31 25.7	59.32
2	17 8 24.55	25 45 29.5	3.90	2	19 0 29.56	23 25 29.8	60.47
3	17 10 49.59	25 45 52.9	2.40	3	19 2 42.86	23 19 27.0	61.58
4	17 13 14.49	25 46 7.3	0.90	4	19 4 55.84	23 13 17.5	62.68
5	17 15 39.26	25 46 12.7	0.60	5	19 7 8.49	23 7 1.4	63.78
6	17 18 3.90	25 46 9.1	2.08	6	19 9 20.81	23 0 38.7	64.88
7	17 20 28.39	25 45 56.6	3.57	7	19 11 32.81	22 54 9.4	65.95
8	17 22 52.73	25 45 35.2	5.05	8	19 13 44.47	22 47 33.7	67.02
9	17 25 16.91	25 45 4.9	6.53	9	19 15 55.80	22 40 51.6	68.07
10	17 27 40.93	25 44 25.7	7.98	10	19 18 6.80	22 34 3.2	69.12
11	17 30 4.77	25 43 37.8	9.47	11	19 20 17.47	22 27 8.5	70.15
12	17 32 28.45	25 42 41.0	10.92	12	19 22 27.81	22 20 7.6	71.17
13	17 34 51.94	25 41 35.5	12.38	13	19 24 37.81	22 13 0.6	72.20
14	17 37 15.24	25 40 21.2	13.82	14	19 26 47.48	22 5 47.4	73.18
15	17 39 38.35	25 38 58.3	15.27	15	19 28 56.82	21 58 28.3	74.18
16	17 42 1.27	25 37 26.7	16.68	16	19 31 5.82	21 51 3.2	75.17
17	17 44 23.97	25 35 46.6	18.12	17	19 33 14.49	21 43 32.2	76.13
18	17 46 46.47	25 33 57.9	19.55	18	19 35 22.82	21 35 55.4	77.08
19	17 49 8.76	25 32 0.6	20.95	19	19 37 30.82	21 28 12.9	78.05
20	17 51 30.83	25 29 54.9	22.37	20	19 39 38.49	21 20 24.6	78.98
21	17 53 52.67	25 27 40.7	23.75	21	19 41 45.83	21 12 30.7	79.92
22	17 56 14.28	25 25 18.2	25.15	22	19 43 52.84	21 4 31.2	80.83
23	17 58 35.66	S. 25 22 47.3	26.53	23	19 45 59.51	S. 20 56 26.2	81.75
<i>THURSDAY 26.</i>				<i>SATURDAY 28.</i>			
0	18 0 56.80	S. 25 20 8.1	27.90	0	19 48 5.85	S. 20 48 15.7	82.65
1	18 3 17.70	25 17 20.7	29.27	1	19 50 11.86	20 39 59.8	83.52
2	18 5 38.35	25 14 25.1	30.63	2	19 52 17.55	20 31 38.7	84.42
3	18 7 58.74	25 11 21.3	31.98	3	19 54 22.91	20 23 12.2	85.28
4	18 10 18.88	25 8 9.4	33.32	4	19 56 27.94	20 14 40.5	86.13
5	18 12 38.76	25 4 49.5	34.65	5	19 58 32.64	20 6 3.7	86.97
6	18 14 58.37	25 1 21.6	35.98	6	20 0 37.03	19 57 21.9	87.82
7	18 17 17.71	24 57 45.7	37.28	7	20 2 41.09	19 48 35.0	88.65
8	18 19 36.78	24 54 2.0	38.60	8	20 4 44.83	19 39 43.1	89.45
9	18 21 55.57	24 50 10.4	39.88	9	20 6 48.25	19 30 46.4	90.27
10	18 24 14.08	24 46 11.1	41.18	10	20 8 51.35	19 21 44.8	91.07
11	18 26 32.31	24 42 4.0	42.47	11	20 10 54.13	19 12 38.4	91.85
12	18 28 50.24	24 37 49.2	43.73	12	20 12 56.60	19 3 27.3	92.62
13	18 31 7.89	24 33 26.8	44.98	13	20 14 58.76	18 54 11.6	93.40
14	18 33 25.24	24 28 56.9	46.23	14	20 17 0.60	18 44 51.2	94.18
15	18 35 42.29	24 24 19.5	47.48	15	20 19 2.14	18 35 26.4	94.90
16	18 37 59.05	24 19 34.6	48.70	16	20 21 3.37	18 25 57.0	95.62
17	18 40 15.50	24 14 42.4	49.93	17	20 23 4.29	18 16 23.3	96.37
18	18 42 31.64	24 9 42.8	51.15	18	20 25 4.91	18 7 45.1	97.07
19	18 44 47.48	24 4 35.9	52.33	19	20 27 5.21	18 0 7.7	97.78
20	18 47 3.01	23 59 21.9	53.53	20	20 29		98.50
21	18 49 18.23	23 54 0.7	54.70	21	20 31		99.17
22	18 51 33.13	23 48 32.5	55.88	22	20 33		99.83
23	18 53 47.72	23 42 57.2	57.05	23	20 35		100.50
24	18 56 1.99	S. 23 37 14.9		24	20 37		101.17

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>SUNDAY 29.</i>				<i>TUESDAY 31.</i>			
0	^h 20 ^m 37 ^s 2 ⁴³	S. 17° 7' 27 ⁷	101 ¹⁸	0	^h 22 ^m 7 ^s 29 ⁸⁰	S. 8° 2' 31 ⁶	123 ³⁷
1	20 39 1 ⁰⁰	16 57 20 ⁶	101 ⁸⁵	1	22 9 18 ⁵³	7 50 11 ⁴	123 ⁶⁷
2	20 40 59 ²⁹	16 47 9 ⁵	102 ⁵⁰	2	22 11 7 ¹⁴	7 37 49 ⁴	123 ⁹⁸
3	20 42 57 ³⁰	16 36 54 ⁵	103 ¹²	3	22 12 55 ⁶⁵	7 25 25 ⁸	124 ²²
4	20 44 55 ⁰³	16 26 35 ⁸	103 ⁷⁵	4	22 14 44 ⁰⁵	7 13 0 ⁵	124 ⁴⁷
5	20 46 52 ⁴⁹	16 16 13 ³	104 ²⁷	5	22 16 32 ³⁵	7 0 33 ⁷	124 ⁷³
6	20 48 49 ⁶⁸	16 5 47 ¹	104 ⁹⁸	6	22 18 20 ⁵⁵	6 48 5 ³	124 ⁹⁸
7	20 50 46 ⁵⁹	15 55 17 ²	105 ⁵⁸	7	22 20 8 ⁶⁶	6 35 35 ⁴	125 ²²
8	20 52 43 ²⁵	15 44 43 ⁷	106 ¹⁷	8	22 21 56 ⁶⁸	6 23 4 ¹	125 ⁴⁷
9	20 54 39 ⁶³	15 34 6 ⁷	106 ⁷⁵	9	22 23 44 ⁶¹	6 10 31 ³	125 ⁷⁰
10	20 56 35 ⁷⁶	15 23 26 ²	107 ³²	10	22 25 32 ⁴⁷	5 57 57 ¹	125 ⁹³
11	20 58 31 ⁶³	15 12 42 ³	107 ⁹⁰	11	22 27 20 ²⁵	5 45 21 ⁵	126 ¹³
12	21 0 27 ²⁵	15 1 54 ⁹	108 ⁴⁵	12	22 29 7 ⁹⁵	5 32 44 ⁷	126 ³⁸
13	21 2 22 ⁶²	14 51 4 ²	109 ⁰⁰	13	22 30 55 ⁵⁹	5 20 6 ⁶	126 ⁵⁷
14	21 4 17 ⁷⁴	14 40 10 ²	109 ⁵³	14	22 32 43 ¹⁷	5 7 27 ²	126 ⁷⁷
15	21 6 12 ⁶¹	14 29 13 ⁰	110 ⁰⁷	15	22 34 30 ⁶⁸	4 54 46 ⁶	126 ⁹⁷
16	21 8 7 ²⁵	14 18 12 ⁶	110 ⁵⁸	16	22 36 18 ¹⁴	4 42 4 ⁸	127 ¹⁵
17	21 10 1 ⁶⁵	14 7 9 ¹	111 ¹²	17	22 38 5 ⁵⁶	4 29 21 ⁹	127 ³³
18	21 11 55 ⁸¹	13 56 2 ⁴	111 ⁶²	18	22 39 52 ⁹²	4 16 37 ⁹	127 ⁵⁰
19	21 13 49 ⁷⁵	13 44 52 ⁷	112 ¹²	19	22 41 40 ²⁴	4 3 52 ⁹	127 ⁶⁸
20	21 15 43 ⁴⁵	13 33 40 ⁰	112 ⁶⁰	20	22 43 27 ⁵²	3 51 6 ⁸	127 ⁸³
21	21 17 36 ⁹³	13 22 24 ⁴	113 ¹⁰	21	22 45 14 ⁷⁷	3 38 19 ⁸	128 ⁰⁰
22	21 19 30 ²⁰	13 11 5 ⁸	113 ⁵⁷	22	22 47 2 ⁰⁰	3 25 31 ⁸	128 ¹⁵
23	21 21 23 ²⁴	S. 12° 59' 44 ⁴	114 ⁰³	23	22 48 49 ¹⁹	S. 3° 12' 42 ⁹	128 ³⁰
<i>MONDAY 30.</i>				<i>WEDNESDAY, JUNE 1.</i>			
0	21 23 16 ⁰⁸	S. 12° 48' 20 ²	114 ⁵⁰	0	22 50 36 ³⁶	S. 2° 59' 53 ¹	
1	21 25 8 ⁷⁰	12 36 53 ²	114 ⁹⁵				
2	21 27 1 ¹²	12 25 23 ⁵	115 ³⁸				
3	21 28 53 ³³	12 13 51 ²	115 ⁸³				
4	21 30 45 ³⁵	12 2 16 ²	116 ²⁷				
5	21 32 37 ¹⁷	11 50 38 ⁶	116 ⁶⁸				
6	21 34 28 ⁸⁰	11 38 58 ⁵	117 ¹⁰				
7	21 36 20 ²⁴	11 27 15 ⁹	117 ⁵²				
8	21 38 11 ⁵⁰	11 15 30 ⁸	117 ⁹⁰				
9	21 40 2 ⁵⁸	11 3 43 ⁴	118 ³⁰				
10	21 41 53 ⁴⁹	10 51 53 ⁶	118 ⁷⁰				
11	21 43 44 ²²	10 40 1 ⁴	119 ⁰⁷				
12	21 45 34 ⁷⁸	10 28 7 ⁰	119 ⁴⁵				
13	21 47 25 ¹⁸	10 16 10 ³	119 ⁸⁰				
14	21 49 15 ⁴²	10 4 11 ⁵	120 ¹⁷				
15	21 51 5 ⁵⁰	9 52 10 ⁵	120 ⁵²				
16	21 52 55 ⁴²	9 40 7 ⁴	120 ⁸⁷				
17	21 54 45 ²⁰	9 28 2 ²	121 ²⁰				
18	21 56 34 ⁸³	9 15 55 ⁰	121 ⁵²				
19	21 58 24 ³²	9 3 45 ⁹	121 ⁸⁷				
	13 ⁶⁸	8 51 34 ⁷	122 ¹⁷				
	2 ⁹⁰	8 39 21 ⁷	122 ⁴⁸				
		8 27 6 ⁸	122 ⁷⁸				
		8 14 50 ¹	123 ⁰⁸				

PHASES OF THE MOON.

- ☾ Last Quarter - 2 0 46¹
- New Moon - 9 23 38⁰
- ☽ First Quarter - 17 0 10²
- Full Moon - 23 21 39⁴
- ☾ Last Quarter - 31 18 51⁰

- ☾ Apogee - 3 7
- ☾ Perigee - 17 22
- ☾ Apogee - 31 3

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.			LUNAR DISTANCES.									
				Noon.	P.L. of diff.	III ^h .	P.L. of diff.	VI ^h .	P.L. of diff.	IX ^h .	P.L. of diff.		
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	
1	Spica η	W.	97 44 0	3006	99 14 6	3014	100 44 1	3022	102 13 47	3029			
	Antares	W.	51 59 44	3001	53 29 56	3009	54 59 58	3016	56 29 51	3023			
	Saturn	W.	14 59 46	3013	16 29 43	3018	17 59 33	3023	19 29 17	3029			
	α Pegasi	E.	54 13 19	3241	52 47 58	3259	51 22 58	3277	49 58 20	3295			
SUN	E.	101 17 50	3382	99 55 13	3391	98 32 46	3398	97 10 27	3407				
2	Antares	W.	63 57 16	3052	65 26 25	3056	66 55 29	3059	68 24 29	3062			
	Saturn	W.	26 56 23	3052	28 25 32	3055	29 54 37	3058	31 23 38	3061			
	Jupiter	W.	18 47 38	3060	20 16 37	3064	21 45 30	3067	23 14 20	3071			
	α Pegasi	E.	43 0 52	3403	41 38 39	3428	40 16 54	3456	38 55 41	3485			
SUN	E.	90 20 53	3437	88 59 18	3441	87 37 48	3448	86 16 22	3448				
3	Antares	W.	75 48 41	3071	77 17 26	3072	78 46 10	3071	80 14 55	3071			
	Saturn	W.	38 48 1	3068	40 16 50	3068	41 45 39	3068	43 14 28	3067			
	Jupiter	W.	30 37 42	3079	32 6 17	3078	33 34 53	3079	35 3 28	3078			
	α Pegasi	E.	32 18 51	3685	31 1 48	3741	29 45 44	3804	28 30 46	3878			
SUN	E.	79 30 0	3458	78 8 49	3458	76 47 38	3458	75 26 27	3458				
4	Antares	W.	87 39 1	3061	89 7 59	3057	90 37 1	3054	92 6 7	3049			
	Saturn	W.	50 39 0	3056	52 8 3	3052	53 37 11	3049	55 6 23	3044			
	Jupiter	W.	42 26 52	3067	43 55 42	3064	45 24 36	3060	46 53 34	3055			
	SUN	E.	68 40 15	3448	67 18 53	3444	65 57 26	3441	64 35 56	3437			
5	Antares	W.	99 33 8	3022	101 2 53	3016	102 32 46	3009	104 2 48	3002			
	Saturn	W.	62 33 57	3017	64 3 49	3010	65 33 50	3003	67 3 59	2996			
	Jupiter	W.	54 19 59	3027	55 49 38	3021	57 19 25	3014	58 49 20	3006			
	SUN	E.	57 47 3	3409	56 24 57	3402	55 2 43	3396	53 40 22	3389			
6	Saturn	W.	74 37 12	2954	76 8 22	2944	77 39 45	2935	79 11 19	2926			
	Jupiter	W.	66 21 26	2965	67 52 23	2955	69 23 32	2946	70 54 53	2935			
	α Aquilæ	W.	61 9 49	3722	62 26 13	3692	63 43 9	3663	65 0 36	3636			
	SUN	E.	46 46 25	3349	45 23 10	3339	43 59 44	3331	42 36 8	3322			
7	Saturn	W.	86 52 21	2873	88 25 14	2863	89 58 20	2851	91 31 42	2841			
	Jupiter	W.	78 34 51	2884	80 7 31	2873	81 40 25	2861	83 13 34	2850			
	α Aquilæ	W.	71 34 53	3514	72 55 2	3493	74 15 34	3472	75 36 30	3453			
	Fomalhaut	W.	46 42 27	3688	47 59 27	3637	49 17 21	3592	50 36 4	3549			
α Pegasi	W.	24 11 22	3941	25 24 0	3815	26 38 47	3707	27 55 27	3611				
SUN	E.	35 35 32	3277	34 10 54	3268	32 46 5	3260	31 21 7	3251				
12	SUN	W.	25 14 52	2842	26 48 26	2828	28 22 18	2815	29 56 27	2801			
	Pollux	E.	34 42 58	2546	33 2 48	2546	31 22 39	2550	29 42 35	2554			
	Regulus	E.	71 15 26	2462	69 33 19	2454	67 51 1	2448	66 8 34	2440			
13	SUN	W.	37 51 14	2747	39 26 52	2738	41 2 42	2729	42 38 43	2721			
	Pollux	E.	21 25 24	2637	19 47 19	2675	18 10 5	2727	16 34 1	2798			
	Regulus	E.	57 33 50	2408	55 50 26	2403	54 6 55	2397	52 23 16	2392			
	Spica η	E.	111 36 55	2403	109 53 25	2398	108 9 47	2392	106 26 1	2386			
14	SUN	W.	50 41 18	2687	52 18 15	2681	53 55 20	2675	55 32				
	Regulus	E.	43 43 19	2371	41 59 2	2368	40 14 41	2364	38 30				
	Spica η	E.	97 45 11	2360	96 0 39	2355	94 16 0	2352	92 31				
15	SUN	W.	63 40 18	2646	65 18 10	2643	66 56 6	2639	68 34				
	Regulus	E.	29 47 18	2355	28 2 39	2357	26 18 2	2358	24 83				

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.	P.L. of diff.	XV ^h .	P.L. of diff.	XVIII ^h .	P.L. of diff.	XXI ^h .	P.L. of diff.
1	Spica α W.	103 43 24	3085	105 12 53	3042	106 42 14	3047	108 11 29	3052
	Antares W.	57 59 35	3080	59 29 11	3086	60 58 39	3041	62 28 1	3047
	Saturn W.	20 58 54	3084	22 28 25	3089	23 57 50	3043	25 27 9	3048
	α Pegasi E.	48 34 3	3315	47 10 9	3336	45 46 39	3337	44 23 33	3379
	SUN E.	95 48 18	3414	94 26 17	3419	93 4 22	3435	91 42 34	3431
2	Antares W.	69 53 25	3065	71 22 17	3067	72 51 7	3069	74 19 55	3070
	Saturn W.	32 52 35	3064	34 21 29	3065	35 50 22	3067	37 19 12	3068
	Jupiter W.	24 43 5	3073	26 11 48	3076	27 40 27	3077	29 9 5	3078
	α Pegasi E.	37 35 0	3518	36 14 56	3553	34 55 30	3592	33 36 47	3636
	SUN E.	84 55 0	3452	83 33 42	3453	82 12 25	3455	80 51 11	3458
3	Antares W.	81 43 40	3069	83 12 27	3068	84 41 16	3066	86 10 7	3064
	Saturn W.	44 43 18	3065	46 12 10	3064	47 41 3	3061	49 10 0	3059
	Jupiter W.	36 32 5	3077	38 0 43	3075	39 29 23	3073	40 58 6	3070
	α Pegasi E.	27 17 4	3960	26 4 45	4061	24 54 5	4178	23 45 18	4330
	SUN E.	74 5 16	3457	72 44 4	3455	71 22 50	3454	70 1 34	3451
4	Antares W.	93 35 19	3045	95 4 36	3039	96 34 0	3035	98 3 30	3023
	Saturn W.	56 35 41	3039	58 5 5	3034	59 34 36	3029	61 4 13	3023
	Jupiter W.	48 22 39	3051	49 51 49	3046	51 21 5	3039	52 50 29	3034
	SUN E.	63 14 21	3432	61 52 41	3426	60 30 54	3421	59 9 1	3416
	5	Antares W.	105 32 59	2994	107 3 19	2986	108 33 49	2978	110 4 30
Saturn W.		68 34 17	2988	70 4 45	2979	71 35 24	2972	73 6 12	2962
Jupiter W.		60 19 23	2999	61 49 39	2990	63 20 4	2983	64 50 39	2973
SUN E.		52 17 53	3381	50 55 15	3372	49 32 27	3365	48 9 31	3357
6		Saturn W.	80 43 5	2915	82 15 5	2905	83 47 17	2898	85 19 42
	Jupiter W.	72 26 27	2926	73 58 13	2916	75 30 12	2905	77 2 25	2894
	α Aquilæ W.	66 18 32	2609	67 36 57	2583	68 55 50	2559	70 15 9	2536
	SUN E.	41 12 22	3313	39 48 25	3304	38 24 18	3294	37 0 0	3286
	7	Saturn W.	93 5 17	2829	94 39 7	2818	96 13 12	2806	97 47 32
Jupiter W.		84 46 57	2838	86 20 35	2827	87 54 28	2815	89 28 36	2803
α Aquilæ W.		76 57 47	2433	78 19 26	2415	79 41 26	2397	81 3 46	2381
Fomalhaut W.		51 55 34	2507	53 15 50	2470	54 36 48	2434	55 58 26	2400
α Pegasi W.		29 13 49	3329	30 33 41	3457	31 54 53	3391	33 17 20	3333
SUN E.	29 55 58	3244	28 30 41	3238	27 5 17	3232	25 39 46	3226	
12	SUN W.	31 30 53	2788	33 5 37	2776	34 40 36	2766	36 15 48	2756
	Pollux E.	28 2 37	2562	26 22 50	2573	24 43 18	2588	23 4 7	2609
	Regulus E.	64 25 56	2433	62 48 8	2427	61 0 11	2420	59 17 5	2414
13	SUN W.	44 14 55	2714	45 51 17	2707	47 27 48	2699	49 4 29	2693
	Pollux E.	14 59 30	2900	13 27 11	3048	11 57 57	3271	10 33 11	3621
	Regulus E.	50 39 30	2387	48 55 37	2382	47 11 37	2378	45 27 31	2374
	Spica α E.	104 42 6	2381	102 58 4	2375	101 13 53	2371	99 29 36	2365
14	SUN W.	57 9 53	2665	58 47 20	2661	60 24 53	2655	62 2 33	2651
	" E.	36 45 45	2359	35 1 11	2357	33 16 35	2356	31 31 57	2355
	" E.	90 46 25	2343	89 1 28	2340	87 16 26	2335	85 31 18	2332
15	" E.	12 14	2632	71 50 26	2629	73 28 41	2626	75 7 0	2623
	" E.		2366	21 4 33	2373	19 20 19	2383	17 36 20	2397

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.			Noon.	P. L. of diff.	III ^h .	P. L. of diff.	VI ^h .	P. L. of diff.	IX ^h .	P. L. of diff.							
	°	'	"	°	'	"	°	'	"	°	'	"						
15	Spica ♀	E.	83	46	5	2328	82	0	47	2326	80	15	25	2322	78	29	58	2320
16	SUN	W.	76	45	24	2621	78	23	51	2618	80	2	22	2616	81	40	53	2613
	Pollux	W.	22	27	28	2488	24	8	58	2462	25	51	5	2440	27	33	43	2422
	Spica ♀	E.	69	41	47	2307	67	55	58	2306	66	10	7	2304	64	24	13	2302
	Antares	E.	115	24	35	2301	113	38	37	2299	111	52	36	2297	110	6	32	2295
17	SUN	W.	89	54	25	2604	91	33	14	2604	93	12	4	2602	94	50	56	2601
	Pollux	W.	36	12	5	2366	37	56	29	2358	39	41	4	2353	41	25	47	2346
	Spica ♀	E.	55	34	12	2296	53	48	7	2296	52	2	1	2295	50	15	54	2295
	Antares	E.	101	15	34	2283	99	29	17	2286	97	42	57	2285	95	56	36	2285
18	SUN	W.	103	5	31	2599	104	44	27	2599	106	23	23	2600	108	2	18	2600
	Pollux	W.	50	11	4	2329	51	56	21	2326	53	41	42	2324	55	27	5	2323
	Regulus	W.	13	15	28	2415	14	58	41	2388	16	42	33	2368	18	26	53	2353
	Spica ♀	E.	41	25	20	2297	39	39	16	2298	37	53	13	2300	36	7	12	2301
	Antares	E.	87	4	37	2283	85	18	12	2282	83	31	46	2283	81	45	22	2283
	Saturn	E.	123	41	43	2272	121	55	3	2272	120	8	22	2272	118	21	41	2272
19	SUN	W.	116	16	40	2606	117	55	27	2608	119	34	11	2610	121	12	52	2613
	Pollux	W.	64	14	23	2322	65	59	51	2322	67	45	18	2322	69	30	45	2324
	Regulus	W.	27	12	18	2322	28	57	46	2320	30	43	17	2319	32	28	49	2318
	Spica ♀	E.	27	18	5	2319	25	32	33	2324	23	47	9	2331	22	1	55	2340
	Antares	E.	72	53	30	2287	71	7	12	2289	69	20	57	2291	67	34	44	2293
	Saturn	E.	109	28	28	2276	107	41	53	2278	105	55	21	2279	104	8	51	2281
	Jupiter	E.	118	1	48	2279	116	15	17	2280	114	28	48	2281	112	42	21	2283
20	SUN	W.	129	25	20	2629	131	3	35	2633	132	41	45	2639	134	19	47	2643
	Pollux	W.	78	17	22	2334	80	2	32	2337	81	47	38	2340	83	32	39	2344
	Regulus	W.	41	16	32	2322	43	2	0	2324	44	47	25	2326	46	32	46	2330
	Antares	E.	58	44	27	2306	56	58	36	2309	55	12	49	2313	53	27	8	2316
	Saturn	E.	95	17	6	2294	93	30	57	2296	91	44	52	2300	89	58	53	2304
	Jupiter	E.	103	50	52	2295	102	4	45	2298	100	18	43	2302	98	32	46	2305
	α Aquilæ	E.	110	40	7	2953	109	8	55	2942	107	37	30	2933	106	5	53	2927
21	Pollux	W.	92	16	16	2366	94	0	39	2372	95	44	54	2377	97	29	1	2384
	Regulus	W.	55	18	16	2348	57	3	5	2355	58	47	45	2359	60	32	19	2365
	Antares	E.	44	40	11	2340	42	55	9	2344	41	10	14	2350	39	25	28	2356
	Saturn	E.	81	10	23	2326	79	25	2	2331	77	39	48	2337	75	54	42	2343
	Jupiter	E.	89	44	28	2327	87	59	8	2333	86	13	56	2338	84	28	52	2344
	α Aquilæ	E.	98	26	10	2911	96	54	5	2913	95	22	2	2915	93	50	2	2919
22	Regulus	W.	69	12	56	2397	70	56	35	2405	72	40	3	2412	74	23	20	2421
	Spica ♀	W.	15	19	45	2470	17	1	40	2463	18	43	46	2460	20	25	55	2460
	Antares	E.	30	43	56	2391	29	0	8	2399	27	16	32	2407	25	33	7	2416
	Saturn	E.	67	11	29	2377	65	27	21	2384	63	43	23	2391	61	59	36	2400
	Jupiter	E.	75	45	46	2377	74	1	38	2385	72	17	41	2392	70	33	55	2400
	α Aquilæ	E.	86	11	40	2954	84	40	29	2965	83	9	32	2977	81	38	50	2990
23	Regulus	W.	82	56	44	2465	84	38	47	2475	86	20	36	2485	88	2	11	2495
	Spica ♀	W.	28	55	56	2482	30	37	34	2490	32	19	2	2498	34			
	Saturn	E.	53	23	45	2445	51	41	14	2455	49	58	57	2464	48			
	Jupiter	E.	61	58	5	2444	60	15	33	2454	58	53	15	2464	56			

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.	P.L. of diff.	XV ^h .	P.L. of diff.	XVIII ^h .	P.L. of diff.	XXI ^h .	P.L. of diff.
15	Spica η E.	76° 44' 28"	2317	74° 58' 53"	2314	73° 13' 14"	2312	71° 27' 32"	2310
16	SUN W.	83 19 32	2611	84 58 12	2610	86 36 54	2608	88 15 38	2606
	Pollux W.	29 16 46	2408	31 0 10	2394	32 43 54	2383	34 27 53	2374
	Spica η E.	62 38 17	2301	60 52 19	2299	59 6 18	2298	57 20 16	2297
	Antares E.	108 20 25	2294	106 34 16	2292	104 48 4	2290	103 1 50	2289
17	SUN W.	96 29 50	2601	98 8 44	2600	99 47 39	2599	101 26 35	2599
	Pollux W.	43 10 39	2342	44 55 37	2338	46 40 41	2335	48 25 50	2331
	Spica η E.	48 29 47	2295	46 43 40	2295	44 57 33	2295	43 11 26	2296
	Antares E.	94 10 14	2284	92 23 51	2283	90 37 27	2283	88 51 2	2283
18	SUN W.	109 41 13	2601	111 20 7	2602	112 59 0	2603	114 37 51	2604
	Pollux W.	57 12 31	2322	58 57 58	2322	60 43 26	2322	62 28 54	2321
	Regulus W.	20 11 35	2344	21 56 31	2335	23 41 39	2330	25 26 55	2325
	Spica η E.	34 21 15	2303	32 35 20	2306	30 49 30	2310	29 3 45	2313
	Antares E.	79 58 57	2284	78 12 34	2284	76 26 11	2285	74 39 50	2286
	Saturn E.	116 35 0	2273	114 48 21	2273	113 1 42	2274	111 15 4	2275
19	SUN W.	122 51 30	2615	124 30 4	2618	126 8 34	2622	127 46 59	2625
	Pollux W.	71 16 9	2325	73 1 32	2327	74 46 52	2329	76 32 9	2332
	Regulus W.	34 14 23	2318	35 59 57	2318	37 45 30	2319	39 31 2	2320
	Spica η E.	20 16 54	2351	18 32 9	2365	16 47 44	2363	15 3 45	2409
	Antares E.	65 48 34	2295	64 2 27	2297	62 16 23	2300	60 30 23	2302
	Saturn E.	102 22 23	2283	100 35 59	2285	98 49 38	2287	97 3 20	2290
	Jupiter E.	110 55 57	2285	109 9 36	2287	107 23 17	2290	105 37 3	2292
20	SUN W.	135 57 44	2649	137 35 33	2655	139 13 14	2661	140 50 46	2667
	Pollux W.	85 17 34	2348	87 8 24	2352	88 47 8	2356	90 31 46	2362
	Regulus W.	48 18 2	2333	50 3 14	2337	51 48 20	2340	53 33 21	2344
	Antares E.	51 41 32	2320	49 56 2	2324	48 10 38	2329	46 25 21	2334
	Saturn E.	88 12 59	2307	86 27 10	2312	84 41 28	2316	82 55 52	2321
	Jupiter E.	96 46 54	2309	95 1 8	2313	93 15 28	2318	91 29 55	2322
	α Aquilæ E.	104 34 8	2920	103 2 14	2916	101 30 16	2913	99 58 14	2912
21	Pollux W.	99 12 59	2390	100 56 48	2397	102 40 27	2405	104 23 55	2412
	Regulus W.	62 16 44	2371	64 1 1	2377	65 45 9	2384	67 29 7	2390
	Antares E.	37 40 50	2363	35 56 22	2369	34 12 3	2376	32 27 54	2384
	Saturn E.	74 9 45	2349	72 24 57	2355	70 40 18	2362	68 55 49	2369
	Jupiter E.	82 43 56	2351	80 59 10	2356	79 14 32	2363	77 30 4	2370
	α Aquilæ E.	92 18 7	2923	90 46 17	2929	89 14 35	2936	87 43 2	2945
22	Regulus W.	76 6 25	2429	77 49 19	2438	79 32 0	2446	81 14 29	2456
	Spica η W.	22 8 4	2461	23 50 12	2465	25 32 14	2470	27 14 9	2476
	Antares E.	23 49 55	2425	22 6 56	2434	20 24 10	2444	18 41 38	2453
	Saturn E.	60 16 1	2408	58 32 38	2417	56 49 28	2426	55 6 30	2435
	Jupiter E.	68 50 20	2409	67 6 58	2417	65 23 47	2427	63 40 50	2435
	α Aquilæ E.	80 8 25	3005	78 38 18	3020	77 8 30	3038	75 39 4	3055
23	Regulus W.	89 43 31	2505	91 24 37	2516	93 5 28	2528	94 46 3	2538
	Spica η W.	35 41 23	2515	37 22 15	2525	39 2 54	2534	40 43 20	2545
	E.	46 35 4	2485	44 53 30	2496	43 12 11	2507	41 31 7	2518
	E.	55 9 20	2484	53 27 45	2495	51 46 24	2506	50 5 19	2516

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.			P. L. of diff.	III ^h .			P. L. of diff.	VI ^h .			P. L. of diff.	IX ^h .			P. L. of diff.
		°	'	"		°	'	"		°	'	"		°	'	"	
23	Fomalhaut E.	98	41	29	2870	97	8	31	2877	95	35	42	2884	94	3	2	2892
24	Regulus W.	96	26	24	2550	98	6	28	2561	99	46	16	2572	101	25	49	2585
	Spica η W.	42	23	31	2555	44	3	28	2566	45	43	10	2576	47	22	38	2588
	Saturn E.	39	50	19	2530	38	9	47	2541	36	29	31	2553	34	49	31	2564
	Jupiter E.	48	24	28	2528	46	43	54	2538	45	3	34	2551	43	23	31	2562
	α Aquilæ E.	62	34	30	3293	61	10	10	3329	59	46	32	3367	58	23	38	3408
	Fomalhaut E.	86	22	52	2949	84	51	35	2962	83	20	34	2977	81	49	52	2993
25	Spica η W.	55	35	58	2646	57	13	50	2659	58	51	25	2671	60	28	44	2684
	Saturn E.	26	33	44	2628	24	55	27	2641	23	17	28	2655	21	39	47	2668
	Jupiter E.	35	7	19	2623	33	28	55	2635	31	50	47	2647	30	12	56	2660
	Fomalhaut E.	74	21	30	3081	72	52	57	3102	71	24	50	3123	69	57	8	3146
	α Pegasi E.	94	43	30	2789	93	8	47	2800	91	34	19	2812	90	0	7	2825
26	Spica η W.	68	31	6	2747	70	6	44	2759	71	42	6	2772	73	17	11	2784
	Antares W.	22	45	43	2743	24	21	26	2755	25	56	53	2768	27	32	3	2780
	Jupiter E.	22	7	55	2723	20	31	45	2735	18	55	52	2748	17	20	16	2760
	Fomalhaut E.	62	45	48	3274	61	21	6	3303	59	56	58	3333	58	33	25	3366
	α Pegasi E.	82	13	21	2892	80	40	52	2906	79	8	41	2921	77	36	49	2935
27	Spica η W.	81	8	35	2845	82	42	4	2857	84	15	18	2868	85	48	18	2880
	Antares W.	35	23	55	2841	36	57	30	2852	38	30	51	2864	40	3	56	2875
	Fomalhaut E.	51	45	35	3555	50	26	12	3601	49	7	39	3649	47	49	57	3701
	α Pegasi E.	70	2	4	3010	68	32	3	3026	67	2	22	3042	65	33	1	3057
	SUN E.	142	54	19	3212	141	28	24	3222	140	2	41	3234	138	37	12	3245
28	Spica η W.	93	29	39	2935	95	1	14	2944	96	32	37	2954	98	3	47	2963
	Antares W.	47	45	50	2928	49	17	33	2939	50	49	2	2948	52	20	20	2958
	Fomalhaut E.	41	36	22	4022	40	25	4	4105	39	15	7	4194	38	6	35	4291
	α Pegasi E.	58	11	12	3140	56	43	51	3158	55	16	52	3176	53	50	14	3195
	α Arietis E.	100	6	27	2945	98	35	5	2954	97	3	54	2965	95	32	57	2974
	SUN E.	131	33	1	3299	130	8	48	3308	128	44	46	3319	127	20	56	3329
29	Antares W.	59	53	57	3000	61	24	10	3008	62	54	13	3014	64	24	8	3021
	Saturn W.	23	47	31	2987	25	18	0	2993	26	48	21	3000	28	18	34	3006
	Jupiter W.	15	10	55	2978	16	41	35	2986	18	12	5	2993	19	42	27	2999
	α Pegasi E.	46	42	50	3297	45	18	35	3319	43	54	46	3345	42	31	42	3371
	α Arietis E.	88	0	55	3016	86	31	2	3023	85	1	18	3030	83	31	42	3037
	SUN E.	120	24	27	3372	119	1	39	3379	117	38	58	3387	116	16	27	3393
30	Antares W.	71	51	50	3048	73	21	4	3051	74	50	13	3056	76	19	17	3059
	Saturn W.	35	47	54	3031	37	17	29	3035	38	46	59	3039	40	16	24	3041
	Jupiter W.	27	12	27	3026	28	42	8	3029	30	11	45	3032	31	41	18	3035
	α Pegasi E.	35	42	57	3535	34	23	11	3577	33	4	11	3624	31	46	3	3678
	α Arietis E.	76	5	38	3065	74	36	45	3069	73	7	57	3073	71	39	14	3076
	SUN E.	109	25	34	3422	108	3	42	3425	106	41	54	3429	105	20	10	3432
31	Antares W.	83	43	51	3068	85	12	40	3068	86	41	29	3067	88	10	19	3068
	Saturn W.	47	42	49	3049	49	12	1	3049	50	41	13	3049	52	10	25	3048
	Jupiter W.	39	8	16	3044	40	37	34	3044	42	6	52	3043	43	36	11	3043
	α Arietis E.	64	16	31	3087	62	48	6	3087	61	19	41	3089	59	51	18	3088
	SUN E.	98	32	16	3441	97	10	46	3441	95	49	16	3441	94	27	46	3440

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.			P. L. of diff.	XV ^h .			P. L. of diff.	XVIII ^h .			P. L. of diff.	XXI ^h .			P. L. of diff.
		°	'	"		°	'	"		°	'	"		°	'	"	
23	Fomalhaut E.	92	30	33	2902	90	58	17	2913	89	26	14	2924	87	54	25	2936
24	Regulus W.	103	5	5	2597	104	44	4	2609	106	22	47	2622	108	1	12	2634
	Spica π W.	49	1	49	2599	50	40	46	2611	52	19	26	2623	53	57	50	2635
	Saturn E.	33	9	47	2577	31	30	21	2589	29	51	11	2602	28	12	19	2615
	Jupiter E.	41	43	44	2574	40	4	13	2586	38	24	59	2598	36	46	1	2610
	α Aquilæ E.	57	1	31	2452	55	40	13	2499	54	19	48	2549	53	0	18	2603
Fomalhaut E.	80	19	30	3008	78	49	27	3026	77	19	46	3043	75	50	26	3062	
25	Spica π W.	62	5	46	2696	63	42	31	2709	65	18	59	2721	66	55	11	2734
	Saturn E.	20	2	24	2682	18	25	20	2697	16	48	36	2712	15	12	12	2728
	Jupiter E.	28	35	22	2672	26	58	5	2685	25	21	5	2698	23	44	22	2710
	Fomalhaut E.	68	29	54	3168	67	3	7	3193	65	36	50	3219	64	11	3	3246
	α Pegasi E.	88	26	12	2838	86	52	34	2852	85	19	13	2864	83	46	8	2878
26	Spica π W.	74	52	0	2796	76	26	33	2809	78	0	49	2821	79	34	50	2833
	Antares W.	29	6	57	2792	30	41	35	2805	32	15	57	2816	33	50	4	2828
	Jupiter E.	15	44	56	2772	14	9	52	2785	12	35	5	2797	11	0	33	2809
	Fomalhaut E.	57	10	30	3400	55	48	18	3436	54	26	37	3474	53	5	44	3514
	α Pegasi E.	76	5	14	2950	74	33	59	2965	73	3	2	2979	71	32	23	2995
27	Spica π W.	87	21	2	2891	88	53	32	2902	90	25	48	2914	91	57	50	2924
	Antares W.	41	36	47	2886	43	9	24	2898	44	41	46	2908	46	13	55	2919
	Fomalhaut E.	46	33	11	3755	45	17	22	3815	44	2	35	3879	42	48	54	3947
	α Pegasi E.	64	3	59	3074	62	35	17	3090	61	6	55	3106	59	38	53	3124
	SUN E.	137	11	56	3286	135	46	53	3267	134	22	3	3278	132	57	26	3288
28	Spica π W.	99	34	46	2973	101	5	33	2982	102	36	8	2990	104	6	33	2998
	Antares W.	53	51	25	2967	55	28	19	2976	56	53	2	2984	58	28	35	2993
	Fomalhaut E.	36	59	34	4400	35	54	13	4519	34	50	38	4652	33	48	58	4799
	α Pegasi E.	52	23	59	3214	50	58	6	3233	49	32	36	3254	48	7	31	3275
	α Arietis E.	94	2	11	2982	92	31	36	2991	91	1	12	3000	89	30	59	3007
	SUN E.	125	57	18	3338	124	33	50	3346	123	10	32	3356	121	47	25	3364
29	Antares W.	65	53	55	3027	67	23	34	3033	68	53	6	3039	70	22	31	3043
	Saturn W.	29	48	40	3012	31	18	38	3018	32	48	29	3022	34	18	15	3027
	Jupiter W.	21	12	41	3005	22	42	47	3010	24	12	47	3016	25	42	40	3021
	α Pegasi E.	41	8	36	3299	39	46	18	3429	38	24	34	3461	37	3	26	3496
	α Arietis E.	82	2	15	3043	80	32	55	3049	79	3	43	3054	77	34	37	3060
	SUN E.	114	54	2	3400	113	31	46	3406	112	9	36	3411	110	47	32	3416
30	Antares W.	77	48	17	3061	79	17	14	3064	80	46	8	3065	82	15	1	3067
	Saturn W.	41	45	46	3043	43	15	5	3046	44	44	21	3047	46	13	36	3048
	Jupiter W.	33	10	47	3038	34	40	12	3040	36	9	35	3042	37	38	56	3043
	α Pegasi E.	30	28	52	3737	29	12	44	3805	27	57	47	3833	26	44	10	3973
	α Arietis E.	70	10	35	3079	68	42	0	3082	67	13	28	3084	65	44	59	3085
	SUN E.	103	58	30	3436	102	36	54	3437	101	15	19	3439	99	53	46	3441
31	Antares W.	89	39	8	3065	91	8	0	3065	92	36	53	3063	94	5	48	3060
	Saturn W.	53	39	38	3047	55	8	53	3046	56	38	9	3048	58	7	28	3040
	Jupiter W.	45	5	31	3042	46	34	52	3039	48	4	16	3038	49	33	42	3035
	α Arietis E.	58	22	54	3088	56	54	30	3087	55	26	4	3087	53	57	38	3084
	- E.	98	6	15	3439	91	44	43	3437	90	23	8	3435	89	1	31	3431

CONFIGURATIONS OF THE SATELLITES OF JUPITER,

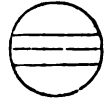
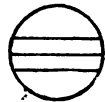
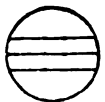
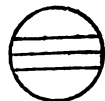
At 14^h 30^m, MEAN TIME.

Day of the Month.	West.	East.
1	.4 .3	○ .1 2.
2	.4 .3 2. 1.	○
3	.4 .2	○ .3 1.
4	.4 .1	○ .2 .3
5		○ 1. 4 .3
6	.2 .1	○ .3 .4
7	1. ○ .3	○ .2 .4
8	.3	○ .1 2. .4
9	.3 2. 1.	○ .4
10	.3 ● .2	○ .1 .4
11	.1	○ .2 .3 .4
12		○ 2. 1. .4 .3
13	.2 .1	○ .3 .4
14	.4 .3	○ 1. 2
15	.4 .3	○ .2 ● .1
16	.4 .3 .2 .1	○ .3 ● .2
17	.4 .2	○ .1 ● .3
18	.4 .1	○ .2 .3
19	.4	○ 2. 1. .3
20	.4 2. .1	○ .3
21	.2 ● .3 .4	○ 1.
22	.3	○ .4 2. ● .1
23	.3 .2 .1	○ .4
24	.2 .3	○ .1 .4
25	.1	○ .2 .3 .4
26		○ 2. 1. .3 .4
27	.2 .1	○ .3 .4
28	3. ○ .2	○ 1. .4
29	.3 .1	○ .4 2.
30	.3 .4 2.	○ .1
31	.4 .3 .3	○ .1

This Table represents, at 14^h 30^m after *Mean Noon* of each day of the month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page; the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the numeral. A white circle (○) at the left or right hand of the page, denotes that the Satellite placed by the side of it is on the disc of Jupiter, and a black circle (●) that it is either *behind* the disc, or in the shadow, of Jupiter.

ECLIPSES OF THE SATELLITES OF JUPITER.

SATELLITE.	Day of the Month.	Mean Time.	Sidereal Time.	PHASE as seen in an inverting Telescope.
I.	1	h m s 7 31 40·0	h m s 10 8 55·0	Im.
	3	2 0 7·9	4 44 21·5	Im.
	4	20 28 29·8	23 19 42·0	Im.
	6*	14 56 59·2	17 55 10·1	Im.
	8	9 25 23·1	12 30 32·6	Im.
	10	3 53 52·1	7 6 0·3	Im.
	11	22 22 15·1	1 41 21·9	Im.
	13	16 50 45·7	20 16 51·1	Im.
	15	11 19 10·8	14 52 14·9	Im.
	17	5 47 41·3	9 27 44·1	Im.
	19	0 16 5·1	4 3 6·5	Im.
	20	18 44 37·1	22 38 37·1	Im.
	22*	13 13 3·5	17 14 2·2	Im.
	24	7 41 35·5	11 49 32·8	Im.
	26	2 10 0·6	6 24 56·6	Im.
	27	20 38 33·8	1 0 28·5	Im.
29†	15 7 1·7	19 35 55·0	Im.	
31	9 35 35·2	14 11 27·2	Im.	
II.	3	17 32 35·7	20 19 22·4	Im.
	7	6 49 29·6	9 50 16·9	Im.
	10	20 6 22·4	23 21 10·3	Im.
	14	9 23 13·9	12 52 2·3	Im.
	17	22 40 6·1	2 22 55·1	Im.
	21†	11 56 57·1	15 53 46·8	Im.
	25	1 13 49·2	5 24 39·5	Im.
	26*	14 30 40·2	18 55 31·0	Im.
III.	3	5 39 43·4	8 24 33·0	Im.
	3	8 49 28·1	11 34 49·0	Em.
	10	9 38 10·0	12 51 14·7	Im.
	10†	12 48 41·1	16 2 17·1	Em.
	17*	13 37 19·7	17 18 39·5	Im.
	17	16 48 36·6	20 30 27·9	Em.
	24	17 36 8·7	21 45 43·8	Im.
	24	20 48 11·8	0 58 18·4	Em.
	31	21 35 22·4	2 13 12·6	Im.
	32	0 48 9·1	5 26 31·0	Em.
IV.	4†	15 57 21·9	18 47 49·6	Im.
	4	18 38 16·3	21 29 10·4	Em.
	21	9 54 33·4	13 51 3·0	Im.
	21†	12 46 4·5	16 43 2·2	Em.

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APPROXIMATE SIDEREAL TIMES
OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER,
AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.			TRANSITS OF SATELLITES.						TRANSITS OF SHADOWS.								
	Immersion.			Emersion.			Ingress.			Egress.			Ingress.			Egress.		
	d	h	m	d	h	m	d	h	m	d	h	m	d	h	m	d	h	m
I.				1	13	41	2	8	44	2	11	3	2	7	29	2	9	48
				3	8	16	4	3	19	4	5	38	3	2	5	4	4	23
				4	2	50	5	21	53	5	0	12	5	20	40	5	22	58
				6	21	28	7†	16	27	7†	18	47	7	15	15	7*17	34	
				8†	15	59	9	11	2	9	13	21	9	9	51	9	12	9
				10	10	34	11	3	36	11	7	55	11	4	26	11	6	41
		In		12	5	8	12	0	10	12	2	29	12	23	1	12	1	20
				13	23	42	14†	18	44	14	21	4	14*17	37	14	19	55	
		the		15*18	16	16	13	18	16†	13	38	16	12	12	16	14	30	
				17	12	51	18	7	52	18	10	11	18	6	47	18	9	6
		Shadow.		19	7	25	19	2	26	20	4	46	19	1	23	19	3	41
				20	1	59	21	21	0	21	23	19	21†	19	58	21	22	16
				22	20	33	23†	15	34	23*17	53	23	14	33	23*16	52		
				24	15	7	25	10	8	25	12	27	25	9	8	25	11	27
				26	9	40	27	4	41	27	7	0	26	3	44	27	6	2
				27	4	14	28	23	15	28	1	34	28	22	19	28	0	38
				29	22	48	30*17	49	30†	20	8	30*16	54	30*19	13			
			31*17	22														
II.				3	1	37	2	8	37	2	6	31	1	1	9	2	4	1
				7	15	4	5*17	6	5	20	0	5	14	42	5*17	33		
				11	4	31	9	6	34	9	9	28	9	4	13	9	7	5
		In the		14*17	57	12	20	2	12	22	56	12*17	46	12	20	37		
				18	7	28	16	9	29	16	12	23	16	7	17	16	10	9
		Shadow.		21	20	48	19	22	56	19	1	50	19	20	50	19	23	42
				25	10	18	23	12	21	23	15	15	23	10	21	23	13	13
			28	23	37	26	1	47	27	4	42	26	23	54	26	2	46	
						30	15	12	30*18	6	30	13	26	30†	16	18		
III.				3†	16	45	7	8	38	7	7	5	6	22	47	6	2	7
				10*17	30	14	7	47	14	11	14	13	3	13	14	6	34	
				17	21	38	21	11	51	21	15	19	21	7	39	21	11	1
				24	1	41	25	5	8	28†	15	52	28	12	6	28	15	29
IV.				5	9	20	13†	13	40	13†	19	8	13	5	19	13	8	14
				21	23	17	30	8	36	30	12	10	29	0	26	29	3	30

Day of the Month.	For correcting the Places of the Fixed Stars.				Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0 ^h .567309.	From Mean Noon of January 1.		
	At Mean Midnight,						Days.	Day of the Year.	Fraction of the Year.
	Logarithm of								
	A	B	C	D					
1	-1.1481	-1.1271	+9.7887	-0.5988	21 20 28.92	39	120	.329	
2	1.1415	1.1353	9.7906	0.5960	21 16 33.01	40	121	.331	
3	1.1348	1.1433	9.7926	0.5931	21 12 37.10	41	122	.334	
4	-1.1278	-1.1510	+9.7946	-0.5902	21 8 41.19	42	123	.337	
5	1.1206	1.1585	9.7966	0.5873	21 4 45.28	43	124	.339	
6	1.1181	1.1657	9.7986	0.5844	21 0 49.37	44	125	.342	
7	-1.1054	-1.1726	+9.8006	-0.5814	20 56 53.46	45	126	.345	
8	1.0974	1.1793	9.8026	0.5784	20 52 57.55	46	127	.349	
9	1.0892	1.1858	9.8046	0.5755	20 49 1.64	47	128	.350	
10	-1.0806	-1.1921	+9.8067	-0.5725	20 45 5.73	48	129	.353	
11	1.0718	1.1982	9.8087	0.5695	20 41 9.82	49	130	.356	
12	1.0627	1.2041	9.8108	0.5665	20 37 13.91	50	131	.359	
13	-1.0533	-1.2097	+9.8128	-0.5635	20 33 17.99	51	132	.361	
14	1.0435	1.2152	9.8149	0.5605	20 29 22.09	52	133	.364	
15	1.0334	1.2204	9.8170	0.5574	20 25 26.18	53	134	.367	
16	-1.0229	-1.2255	+9.8191	-0.5544	20 21 30.26	54	135	.370	
17	1.0120	1.2304	9.8212	0.5514	20 17 34.35	55	136	.372	
18	1.0007	1.2351	9.8233	0.5485	20 13 38.44	56	137	.375	
19	-0.9890	-1.2397	+9.8254	-0.5455	20 9 42.53	57	138	.378	
20	0.9769	1.2441	9.8275	0.5425	20 5 46.62	58	139	.381	
21	0.9643	1.2483	9.8296	0.5396	20 1 50.71	59	140	.383	
22	-0.9512	-1.2523	+9.8317	-0.5367	19 57 54.80	60	141	.386	
23	0.9376	1.2562	9.8339	0.5338	19 53 58.89	61	142	.389	
24	0.9234	1.2599	9.8360	0.5309	19 50 2.98	62	143	.392	
25	-0.9086	-1.2635	+9.8381	-0.5280	19 46 7.06	63	144	.394	
26	0.8932	1.2669	9.8403	0.5252	19 42 11.15	64	145	.397	
27	0.8771	1.2702	9.8424	0.5225	19 38 15.24	65	146	.400	
28	-0.8602	-1.2733	+9.8445	-0.5197	19 34 19.33	66	147	.402	
29	0.8425	1.2763	9.8467	0.5170	19 30 23.42	67	148	.405	
30	0.8240	1.2792	9.8488	0.5143	19 26 27.51	68	149	.408	
31	0.8045	1.2819	9.8510	0.5117	19 22 31.59	69	150	.411	
32	-0.7840	-1.2844	+9.8531	-0.5091	19 18 35.68	70	151	.418	

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, to be subtr. from	Diff. for 1 hour
		Apparent Right Ascension.	Diff. for 1 hour.	Apparent Declination.	Diff. for 1 hour.			
		<i>h m s</i>	<i>s</i>	<i>o ' "</i>	<i>"</i>	<i>m s</i>	<i>m s</i>	<i>"</i>
Wed.	1	4 35 38·13	10·234	N.22 2 39·8	20·10	1 8·31	2 35·43	0·27
Thur.	2	4 39 43·75	10·252	22 10 42·3	19·13	1 8·37	2 26·40	0·39
Frid.	3	4 43 49·79	10·268	22 18 21·6	18·16	1 8·42	2 16·94	0·41
Sat.	4	4 47 56·21	10·283	22 25 37·5	17·19	1 8·47	2 7·11	0·42
Sun.	5	4 52 3·01	10·298	22 32 30·0	16·20	1 8·52	1 56·90	0·44
Mon.	6	4 56 10·15	10·312	22 38 58·8	15·21	1 8·56	1 46·34	0·45
Tues.	7	5 0 17·63	10·324	22 45 3·8	14·21	1 8·60	1 35·45	0·46
Wed.	8	5 4 25·40	10·336	22 50 44·8	13·21	1 8·64	1 24·26	0·47
Thur.	9	5 8 33·46	10·346	22 56 1·8	12·20	1 8·68	1 12·79	0·48
Frid.	10	5 12 41·77	10·356	23 0 54·5	11·19	1 8·71	1 1·08	0·49
Sat.	11	5 16 50·31	10·365	23 5 23·0	10·17	1 8·74	0 49·13	0·50
Sun.	12	5 20 59·06	10·372	23 9 27·0	9·16	1 8·77	0 36·97	0·51
Mon.	13	5 25 7·98	10·378	23 13 6·6	8·13	1 8·80	0 24·64	0·52
Tues.	14	5 29 17·05	10·382	23 16 21·7	7·11	1 8·82	0 12·17	0·52
Wed.	15	5 33 26·25	10·388	23 19 12·2	6·08	1 8·84	0 0·44	0·53
Thur.	16	5 37 35·56	10·391	23 21 38·0	5·05	1 8·86	0 13·16	0·53
Frid.	17	5 41 44·94	10·393	23 23 39·1	4·02	1 8·87	0 25·95	0·53
Sat.	18	5 45 54·38	10·395	23 25 15·5	2·99	1 8·88	0 38·80	0·53
Sun.	19	5 50 3·87	10·396	23 26 27·2	1·95	1 8·88	0 51·69	0·53
Mon.	20	5 54 13·37	10·395	23 27 14·1	0·92	1 8·89	1 4·60	0·53
Tues.	21	5 58 22·86	10·395	23 27 36·2	0·11	1 8·89	1 17·50	0·53
Wed.	22	6 2 32·34	10·393	23 27 33·5	1·14	1 8·89	1 30·38	0·53
Thur.	23	6 6 41·77	10·390	23 27 6·1	2·17	1 8·88	1 43·22	0·53
Frid.	24	6 10 51·14	10·387	23 26 13·9	3·20	1 8·87	1 56·00	0·52
Sat.	25	6 15 0·43	10·382	23 24 57·0	4·23	1 8·86	2 8·69	0·52
Sun.	26	6 19 9·61	10·378	23 23 15·4	5·26	1 8·84	2 21·28	0·52
Mon.	27	6 23 18·67	10·372	23 21 9·1	6·29	1 8·82	2 33·75	0·51
Tues.	28	6 27 27·60	10·365	23 18 38·1	7·31	1 8·80	2 46·08	0·50
Wed.	29	6 31 36·37	10·358	23 15 42·6	8·33	1 8·77	2 58·26	0·50
Thur.	30	6 35 44·95	10·350	23 12 22·6	9·35	1 8·74	3 10·25	0·49
Frid.	31	6 39 53·34		N.23 8 38·1		1 8·7		

* Mean Time of the Semidiameter passing may be found by subtracting

AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S			Equation of Time, to be added to subt. from Mean Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semidiam.*		
Wed.	1	h m s 4 35 38·57	N. 22 ° ' " 2 40·7	15 47·2	2 35·42	h m s 4 38 13·99
Thur.	2	4 39 44·17	22 10 43·1	15 47·0	2 26·38	4 42 10·55
Frid.	3	4 43 50·18	22 18 22·3	15 46·9	2 16·93	4 46 7·11
Sat.	4	4 47 56·57	22 25 38·2	15 46·8	2 7·09	4 50 3·67
Sun.	5	4 52 3·34	22 32 30·5	15 46·6	1 56·88	4 54 0·22
Mon.	6	4 56 10·45	22 38 59·2	15 46·5	1 46·38	4 57 56·78
Tues.	7	5 0 17·90	22 45 4·2	15 46·4	1 35·44	5 1 53·34
Wed.	8	5 4 25·65	22 50 45·2	15 46·3	1 24·25	5 5 49·90
Thur.	9	5 8 33·67	22 56 2·0	15 46·2	1 12·79	5 9 46·45
Frid.	10	5 12 41·95	23 0 54·7	15 46·1	1 1·07	5 13 43·01
Sat.	11	5 16 50·45	23 5 23·1	15 46·0	0 49·12	5 17 39·57
Sun.	12	5 20 59·16	23 9 27·1	15 45·9	0 36·97	5 21 36·13
Mon.	13	5 25 8·05	23 13 6·7	15 45·8	0 24·64	5 25 32·69
Tues.	14	5 29 17·08	23 16 21·7	15 45·8	0 12·16	5 29 29·25
Wed.	15	5 33 26·25	23 19 12·2	15 45·7	0 0·44	5 33 25·80
Thur.	16	5 37 35·52	23 21 38·0	15 45·6	0 13·16	5 37 22·36
Frid.	17	5 41 44·87	23 23 39·1	15 45·6	0 25·95	5 41 18·92
Sat.	18	5 45 54·27	23 25 15·5	15 45·5	0 38·79	5 45 15·48
Sun.	19	5 50 3·72	23 26 27·1	15 45·4	0 51·68	5 49 12·04
Mon.	20	5 54 13·18	23 27 14·0	15 45·4	1 4·59	5 53 8·60
Tues.	21	5 58 22·64	23 27 36·2	15 45·3	1 17·49	5 57 5·15
Wed.	22	6 2 32·08	23 27 33·6	15 45·3	1 30·37	6 1 1·71
Thur.	23	6 6 41·47	23 27 6·2	15 45·2	1 43·20	6 4 58·27
Frid.	24	6 10 50·81	23 26 14·0	15 45·2	1 55·98	6 8 54·83
Sat.	25	6 15 0·06	23 24 57·1	15 45·2	2 8·67	6 12 51·39
Sun.	26	6 19 9·20	23 23 15·5	15 45·2	2 21·26	6 16 47·95
Mon.	27	6 23 18·23	23 21 9·3	15 45·1	2 33·73	6 20 44·50
Tues.	28	6 27 27·12	23 18 38·4	15 45·1	2 46·06	6 24 41·06
Wed.	29	6 31 35·86	23 15 43·0	15 45·1	2 58·24	6 28 37·62
Thur.	30	6 35 44·41	23 12 23·1	15 45·1	3 10·23	6 32 34·18
Fri.	31	6 39 52·76	N. 23 8 38·7	15 45·1	3 22·02	6 36 30·74

*mer for Apparent Noon may be assumed the same as that for Mean Noon.

MEAN TIME.

THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S			
Longitude.	Latitude.		Semidiameter.		Horizontal Parallax.	
<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>
70 31 3.6	N.0 66	0.0062608	14 47.7	14 49.3	54 17.5	54 23.4
71 28 30.5	0.73	0.0063237	14 51.5	14 54.5	54 31.6	54 42.4
72 25 56.8	0.77	0.0063846	14 58.1	15 2.2	54 55.7	55 10.7
73 23 22.3	0.78	0.0064434	15 6.9	15 12.0	55 28.1	55 46.8
74 20 47.2	0.77	0.0065000	15 17.5	15 23.2	56 6.8	56 27.9
75 18 11.4	0.72	0.0065542	15 29.1	15 35.0	56 49.5	57 11.3
76 15 34.9	0.64	0.0066059	15 40.9	15 46.6	57 38.0	57 53.9
77 12 57.7	0.53	0.0066552	15 52.0	15 57.0	58 13.7	58 32.1
78 10 19.7	0.41	0.0067020	16 1.6	16 5.5	58 48.7	59 3.0
79 7 40.9	0.28	0.0067462	16 8.8	16 11.4	59 15.3	59 24.9
80 5 1.3	N.0 14	0.0067880	16 13.3	16 14.5	59 31.9	59 36.2
81 2 20.9	0.00	0.0068274	16 15.1	16 15.0	59 38.3	59 38.1
81 59 39.6	S.0 13	0.0068644	16 14.4	16 13.2	59 35.8	59 31.5
82 56 57.4	0.24	0.0068991	16 11.7	16 9.7	59 25.7	59 18.5
83 54 14.4	0.33	0.0069318	16 7.4	16 4.8	59 10.1	59 0.6
84 51 30.6	0.40	0.0069625	16 2.0	15 59.0	58 50.2	58 39.1
85 48 45.9	0.44	0.0069912	15 55.7	15 52.3	58 27.3	58 14.7
86 46 0.4	0.45	0.0070181	15 48.7	15 45.1	58 1.6	57 48.1
87 43 14.3	0.43	0.0070433	15 41.2	15 37.2	57 33.9	57 19.1
88 40 27.6	0.38	0.0070670	15 33.1	15 28.9	57 4.1	56 48.8
89 37 40.3	0.30	0.0070891	15 24.7	15 20.4	56 33.5	56 17.7
90 34 52.6	0.20	0.0071097	15 16.3	15 12.1	56 2.4	55 47.2
91 32 4.5	S.0 08	0.0071290	15 8.1	15 4.3	55 32.4	55 18.4
92 29 16.2	N.0 05	0.0071469	15 0.6	14 57.3	55 5.0	54 52.9
93 26 27.6	0.18	0.0071633	14 54.3	14 51.6	54 41.7	54 31.8
94 23 38.8	0.30	0.0071783	14 49.4	14 47.6	54 23.7	54 17.2
95 20 50.1	0.41	0.0071916	14 46.3	14 45.6	54 12.5	54 9.8
96 18 1.5	0.51	0.0072033	14 45.5	14 45.9	54 9.5	54 11.2
97 15 13.1	0.58	0.0072133	14 47.1	14 48.9	54 15.4	54 22.2
98 12 24.8	0.63	0.0072213	14 51.4	14 54.6	54 31.3	54 43.0
99 9 36.8	N.0 64	0.0072272	14 58.5	15 3.0	54 57.1	55 13.7

MEAN TIME.

		THE MOON'S									
Day of the Week.	Day of the Month.	Longitude.				Latitude.				Age.	Meridian
		Noon.		Midnight.		Noon.		Midnight.		Noon.	Passage.
		°	'	°	'	°	'	°	'	d	h
Wed.	1	342	51 34 2	348	48 43 9	N.4	2 48 5	N.4	21 37 0	22 0	18 42 7
Thur.	2	354	47 47 3	0	49 20 3	4	37 40 0	4	50 46 2	23 0	19 23 5
Frid.	3	6	53 55 9	13	2 4 4	5	0 43 1	5	7 20 4	24 0	20 6 0
Sat.	4	19	14 13 7	25	30 46 2	5	10 26 9	5	9 53 3	25 0	20 51 4
Sun.	5	31	52 1 2	38	18 11 4	5	5 32 1	4	57 17 3	26 0	21 40 7
Mon.	6	44	49 25 5	51	25 44 3	4	45 5 6	4	28 57 5	27 0	22 24 3
Tues.	7	58	7 4 5	64	53 15 1	4	8 56 5	3	45 11 7	28 0	23 31 9
Wed.	8	71	44 0 9	78	38 58 9	3	17 56 1	2	47 28 3	29 0	0
Thur.	9	85	37 43 6	92	39 47 3	2	14 11 7	1	38 35 2	0 6	0 32 1
Frid.	10	99	44 38 1	106	51 42 7	N.1	1 11 3	N.0	22 36 3	1 6	1 32 7
Sat.	11	114	0 27 8	121	10 22 0	S.0	16 31 1	S.0	55 30 8	2 6	2 31 6
Sun.	12	128	20 53 8	135	31 35 4	1	33 42 0	2	10 26 5	3 6	3 27 3
Mon.	13	142	41 59 7	149	51 44 7	2	45 6 5	3	17 7 6	4 6	4 20 0
Tues.	14	157	0 28 5	164	7 53 8	3	45 59 3	4	11 15 6	5 6	5 10 1
Wed.	15	171	13 43 2	178	17 43 9	4	32 34 2	4	49 38 2	6 6	5 58 9
Thur.	16	185	19 41 3	192	19 24 2	5	2 16 0	5	10 19 7	7 6	6 47 5
Frid.	17	199	16 40 3	206	11 19 6	5	13 46 3	5	12 38 1	8 6	7 37 1
Sat.	18	213	3 10 2	219	52 3 6	5	7 0 8	4	57 5 4	9 6	8 28 5
Sun.	19	226	37 48 6	233	20 18 0	4	43 5 2	4	25 17 5	10 6	9 22 0
Mon.	20	239	59 22 5	246	34 56 4	4	4 2 3	3	39 41 8	11 6	10 17 2
Tues.	21	253	6 53 2	259	35 10 8	3	12 40 5	2	43 23 3	12 6	11 12 9
Wed.	22	265	59 47 0	272	20 43 2	2	12 17 6	1	39 48 8	13 6	12 7 6
Thur.	23	278	38 2 4	284	51 52 5	S.1	6 23 9	S.0	32 27 7	14 6	12 59 9
Frid.	24	291	2 21 2	297	9 42 8	N.0	1 34 2	N.0	35 19 3	15 6	13 49 0
Sat.	25	303	14 11 4	309	16 6 1	1	8 25 4	1	40 32 4	16 6	14 34 8
Sun.	26	315	15 47 7	321	13 40 4	2	11 21 0	2	40 34 8	17 6	15 17 8
Mon.	27	327	10 10 9	333	5 45 6	3	7 57 6	3	33 15 6	18 6	15 58 8
Tues.	28	339	0 56 4	344	56 15 5	3	56 14 5	4	16 42 9	19 6	16 38 8
Wed.	29	350	52 15 2	356	49 30 4	4	34 28 5	4	49 21 2	20 6	17 18 7
Thur.	30	2	48 34 7	8	50 3 7	5	1 9 6	5	9 45 1	21 6	17 59 8
Frid.	31	14	54 31 2	21	2 31 5	N.5	14 57 7	N.5	16 39 6	22 6	18 43 2

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>WEDNESDAY 1.</i>				<i>FRIDAY 3.</i>			
0	22 50 36.36	S. 2 59 53.1	128.43	0	0 17 20.63	N. 7 20 28.8	127.44
1	22 52 23.52	2 47 2.5	128.57	1	0 19 12.09	7 33 13.4	127.23
2	22 54 10.66	2 34 11.1	128.70	2	0 21 3.74	7 45 56.8	127.05
3	22 55 57.80	2 21 18.9	128.82	3	0 22 55.60	7 58 39.1	126.82
4	22 57 44.93	2 8 26.0	128.92	4	0 24 47.66	8 11 20.0	126.60
5	22 59 32.06	1 55 32.5	129.05	5	0 26 39.93	8 23 59.6	126.38
6	23 1 19.20	1 42 38.2	129.13	6	0 28 32.42	8 36 37.9	126.13
7	23 3 6.34	1 29 43.4	129.23	7	0 30 25.13	8 49 14.7	125.88
8	23 4 53.50	1 16 48.0	129.32	8	0 32 18.06	9 1 50.0	125.63
9	23 6 40.68	1 3 52.1	129.40	9	0 34 11.21	9 14 23.8	125.38
10	23 8 27.88	0 50 55.7	129.48	10	0 36 4.60	9 26 56.1	125.10
11	23 10 15.10	0 37 58.8	129.55	11	0 37 58.23	9 39 26.7	124.82
12	23 12 2.35	0 25 1.5	129.62	12	0 39 52.09	9 51 55.6	124.53
13	23 13 49.64	S. 0 12 3.8	129.67	13	0 41 46.20	10 4 22.8	124.23
14	23 15 36.97	N. 0 0 54.2	129.72	14	0 43 40.56	10 16 48.2	123.92
15	23 17 24.33	0 13 52.5	129.75	15	0 45 35.18	10 29 11.7	123.60
16	23 19 11.75	0 26 51.0	129.80	16	0 47 30.05	10 41 33.3	123.28
17	23 20 59.22	0 39 49.8	129.83	17	0 49 25.18	10 53 53.0	122.93
18	23 22 46.75	0 52 48.8	129.87	18	0 51 20.58	11 6 10.6	122.60
19	23 24 34.33	1 5 48.0	129.88	19	0 53 16.25	11 18 26.2	122.23
20	23 26 21.98	1 18 47.3	129.88	20	0 55 12.19	11 30 39.6	121.87
21	23 28 9.70	1 31 46.6	129.90	21	0 57 8.41	11 42 50.8	121.50
22	23 29 57.50	1 44 46.0	129.90	22	0 59 4.92	11 54 59.8	121.12
23	23 31 45.37	N. 1 57 45.4	129.88	23	1 1 1.70	N. 12 7 6.5	120.72
<i>THURSDAY 2.</i>				<i>SATURDAY 4.</i>			
0	23 33 33.33	N. 2 10 44.7	129.88	0	1 2 58.78	N. 12 19 10.8	120.32
1	23 35 21.38	2 23 44.0	129.85	1	1 4 56.15	12 31 12.7	119.88
2	23 37 9.51	2 36 43.1	129.85	2	1 6 53.82	12 43 12.0	119.47
3	23 38 57.74	2 49 42.2	129.80	3	1 8 51.79	12 55 8.8	119.03
4	23 40 46.08	3 2 41.0	129.75	4	1 10 50.06	13 7 3.0	118.60
5	23 42 34.51	3 15 39.5	129.72	5	1 12 48.65	13 18 54.6	118.12
6	23 44 23.06	3 28 37.8	129.65	6	1 14 47.54	13 30 43.3	117.67
7	23 46 11.72	3 41 35.7	129.60	7	1 16 46.76	13 42 29.3	117.18
8	23 48 0.50	3 54 33.3	129.53	8	1 18 46.29	13 54 12.4	116.70
9	23 49 49.41	4 7 30.5	129.45	9	1 20 46.16	14 5 52.6	116.18
10	23 51 38.43	4 20 27.2	129.37	10	1 22 46.34	14 17 29.7	115.68
11	23 53 27.59	4 33 23.4	129.28	11	1 24 46.87	14 29 3.8	115.17
12	23 55 16.89	4 46 19.1	129.18	12	1 26 47.72	14 40 34.8	114.68
13	23 57 6.33	4 59 14.2	129.07	13	1 28 48.91	14 52 2.6	114.08
14	23 58 55.91	5 12 8.6	128.97	14	1 30 50.45	15 3 27.1	113.43
15	0 0 45.64	5 25 2.4	128.83	15	1 32 52.33	15 14 48.3	112.95
16	0 2 35.52	5 37 55.4	128.72	16	1 34 54.56	15 26 6.0	112.38
17	0 4 25.57	5 50 47.7	128.58	17	1 36 57.15	15 37 20.3	111.78
18	0 6 15.77	6 3 39.2	128.45	18	1 39 0.09	15 48 31.0	111.18
19	0 8 6.14	6 16 29.9	128.28	19	1 41 3.39	15 58 50.1	110.57
20	0 9 56.68	6 29 19.6	128.15	20	1 43 7.05		
21	0 11 47.39	6 42 8.5	127.97	21	1 45 11.07		
22	0 13 38.29	6 54 56.3	127.80	22	1 47 15.47		
23	0 15 29.36	7 7 43.1	127.62	23	1 49		
24	0 17 20.63	N. 7 20 28.8		24	1 51		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>SUNDAY 5.</i>				<i>TUESDAY 7.</i>			
0	h m s	° ' "	"	0	h m s	° ' "	"
0	1 51 25.37	N.16 54 16.7	107.30	0	3 39 23.48	N.23 47 59.3	58.68
1	1 53 30.88	17 5 0.5	106.62	1	3 41 48.30	23 53 51.4	57.33
2	1 55 36.77	17 15 40.2	105.90	2	3 44 13.49	23 59 35.4	56.97
3	1 57 43.05	17 26 15.6	105.18	3	3 46 39.05	24 5 11.2	56.78
4	1 59 49.71	17 36 46.7	104.47	4	3 49 4.97	24 10 38.7	53.18
5	2 1 56.75	17 47 13.5	103.72	5	3 51 31.26	24 15 57.8	61.78
6	2 4 4.19	17 57 35.8	102.97	6	3 53 57.90	24 21 8.5	50.35
7	2 6 12.01	18 7 53.6	102.20	7	3 56 24.89	24 26 10.6	48.92
8	2 8 20.23	18 18 6.8	101.40	8	3 58 52.23	24 31 4.1	47.48
9	2 10 28.85	18 28 15.2	100.62	9	4 1 19.91	24 35 49.0	46.02
10	2 12 37.86	18 38 18.9	99.82	10	4 3 47.93	24 40 25.1	44.55
11	2 14 47.28	18 48 17.8	99.98	11	4 6 16.27	24 44 52.4	43.07
12	2 16 57.09	18 58 11.7	98.15	12	4 8 44.95	24 49 10.8	41.57
13	2 19 7.31	19 8 0.6	97.30	13	4 11 13.95	24 53 20.2	40.07
14	2 21 17.94	19 17 44.4	96.45	14	4 13 43.26	24 57 20.6	38.55
15	2 23 28.97	19 27 33.1	95.55	15	4 16 12.88	25 1 11.9	37.02
16	2 25 40.41	19 36 56.4	94.68	16	4 18 42.81	25 4 54.0	35.48
17	2 27 52.26	19 46 24.5	93.77	17	4 21 13.03	25 8 26.9	33.93
18	2 30 4.52	19 55 47.1	92.83	18	4 23 43.54	25 11 50.5	32.37
19	2 32 17.19	20 5 4.1	91.92	19	4 26 14.34	25 15 4.7	30.80
20	2 34 30.28	20 14 15.6	90.98	20	4 28 45.41	25 18 9.5	29.22
21	2 36 43.77	20 23 21.5	90.00	21	4 31 16.75	25 21 4.8	27.63
22	2 38 57.69	20 32 21.5	89.03	22	4 33 48.36	25 23 50.6	26.03
23	2 41 12.01	N.20 41 15.7	88.05	23	4 36 20.22	N.25 26 26.8	24.43
<i>MONDAY 6.</i>				<i>WEDNESDAY 8.</i>			
0	2 43 26.75	N.20 50 4.0	87.05	0	4 38 52.33	N.25 28 53.4	22.82
1	2 45 41.90	20 58 46.3	86.02	1	4 41 24.69	25 31 10.3	21.18
2	2 47 57.47	21 7 22.4	85.00	2	4 43 57.27	25 33 17.4	19.55
3	2 50 13.45	21 15 52.4	83.95	3	4 46 30.09	25 35 14.7	17.90
4	2 52 29.85	21 24 16.1	82.88	4	4 49 3.12	25 37 2.1	16.25
5	2 54 46.67	21 32 33.4	81.82	5	4 51 36.37	25 38 39.6	14.62
6	2 57 3.89	21 40 44.3	80.72	6	4 54 9.82	25 40 7.3	12.93
7	2 59 21.53	21 48 48.6	79.63	7	4 56 43.46	25 41 24.9	11.27
8	3 1 39.59	21 56 46.4	78.50	8	4 59 17.29	25 42 32.5	9.58
9	3 3 58.05	22 4 37.4	77.37	9	5 1 51.30	25 43 30.0	7.92
10	3 6 16.93	22 12 21.6	76.22	10	5 4 25.49	25 44 17.5	6.22
11	3 8 36.21	22 19 58.9	75.07	11	5 6 59.83	25 44 54.8	4.52
12	3 10 55.91	22 27 29.3	73.88	12	5 9 34.33	25 45 21.9	2.82
13	3 13 16.02	22 34 52.6	72.70	13	5 12 8.98	25 45 38.8	1.12
14	3 15 36.53	22 42 8.8	71.48	14	5 14 43.76	25 45 45.3	0.58
15	3 17 57.44	22 49 17.7	70.28	15	5 17 18.66	25 45 42.0	2.30
16	3 20 18.76	22 56 19.4	69.03	16	5 19 53.69	25 45 28.2	4.03
17	3 22 40.48	23 3 13.6	67.80	17	5 22 28.82	25 45 4.0	5.73
18	3 25 2.60	23 10 0.4	66.53	18	5 25 4.06	25 44 29.6	7.47
19	3 27 25.11	23 16 39.6	65.25	19	5 27 39.39	25 43 44.8	9.18
	3 29 48.01	23 23 11.1	63.98	20	5 30 14.80	25 42 49.7	10.92
	3 32 11.30	23 29 35.0	62.67	21	5 32 50.29	25 41 44.2	12.65
	3 34 34.98	23 35 51.0	61.35	22	5 35 25.84	25 40 28.3	14.37
	3 37 59.04	23 41 59.1	60.03	23	5 38 1.45	25 39 2.1	16.12
	3 41 23.48	N.23 47 50.2		24	5 40 27.11	N.25 27 28.4	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 th .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 th .
THURSDAY 9.				SATURDAY 11.			
0	5 40 37 ^{h m s} .11	N.25 37 25 ^{o i n} .4	17 ^h .33	0	7 43 23 ^{h m s} .17	N.21 3 18 ^{o i n} .6	94 ^h .95
1	5 43 12 ^{h m s} .81	25 35 38 ^{o i n} .4	19 ^h .58	1	7 45 51 ^{h m s} .65	20 53 48 ^{o i n} .9	96 ^h .65
2	5 45 48 ^{h m s} .53	25 33 40 ^{o i n} .9	21 ^h .80	2	7 48 19 ^{h m s} .84	20 44 11 ^{o i n} .2	97 ^h .65
3	5 48 24 ^{h m s} .27	25 31 33 ^{o i n} .1	22 ^h .03	3	7 50 47 ^{h m s} .75	20 34 25 ^{o i n} .3	98 ^h .95
4	5 51 0 ^{h m s} .03	25 29 14 ^{o i n} .9	24 ^h .78	4	7 53 15 ^{h m s} .36	20 24 31 ^{o i n} .6	100 ^h .83
5	5 53 35 ^{h m s} .79	25 26 46 ^{o i n} .2	26 ^h .50	5	7 55 42 ^{h m s} .68	20 14 29 ^{o i n} .9	101 ^h .57
6	5 56 11 ^{h m s} .54	25 24 7 ^{o i n} .2	28 ^h .22	6	7 58 9 ^{h m s} .71	20 4 20 ^{o i n} .5	102 ^h .85
7	5 58 47 ^{h m s} .27	25 21 17 ^{o i n} .9	29 ^h .97	7	8 0 36 ^{h m s} .44	19 54 3 ^{o i n} .4	104 ^h .12
8	6 1 22 ^{h m s} .99	25 18 18 ^{o i n} .1	31 ^h .68	8	8 3 2 ^{h m s} .37	19 43 38 ^{o i n} .7	106 ^h .67
9	6 3 58 ^{h m s} .67	25 15 8 ^{o i n} .0	33 ^h .40	9	8 5 29 ^{h m s} .01	19 33 6 ^{o i n} .5	106 ^h .60
10	6 6 34 ^{h m s} .31	25 11 47 ^{o i n} .6	35 ^h .12	10	8 7 54 ^{h m s} .84	19 22 26 ^{o i n} .9	107 ^h .82
11	6 9 9 ^{h m s} .90	25 8 16 ^{o i n} .9	36 ^h .85	11	8 10 20 ^{h m s} .36	19 11 40 ^{o i n} .0	109 ^h .02
12	6 11 45 ^{h m s} .43	25 4 35 ^{o i n} .8	38 ^h .55	12	8 12 45 ^{h m s} .59	19 0 45 ^{o i n} .8	110 ^h .22
13	6 14 20 ^{h m s} .90	25 0 44 ^{o i n} .5	40 ^h .27	13	8 15 10 ^{h m s} .50	18 49 44 ^{o i n} .5	111 ^h .83
14	6 16 56 ^{h m s} .29	24 56 42 ^{o i n} .9	41 ^h .97	14	8 17 35 ^{h m s} .11	18 38 36 ^{o i n} .2	112 ^h .65
15	6 19 31 ^{h m s} .60	24 52 31 ^{o i n} .1	43 ^h .67	15	8 19 59 ^{h m s} .41	18 27 20 ^{o i n} .9	113 ^h .68
16	6 22 6 ^{h m s} .82	24 48 9 ^{o i n} .1	45 ^h .37	16	8 22 23 ^{h m s} .41	18 15 58 ^{o i n} .8	114 ^h .82
17	6 24 41 ^{h m s} .94	24 43 36 ^{o i n} .9	47 ^h .05	17	8 24 47 ^{h m s} .09	18 4 29 ^{o i n} .9	115 ^h .92
18	6 27 16 ^{h m s} .95	24 38 54 ^{o i n} .6	48 ^h .73	18	8 27 10 ^{h m s} .47	17 52 54 ^{o i n} .4	117 ^h .08
19	6 29 51 ^{h m s} .84	24 34 2 ^{o i n} .2	50 ^h .46	19	8 29 33 ^{h m s} .54	17 41 12 ^{o i n} .2	118 ^h .10
20	6 32 26 ^{h m s} .62	24 28 59 ^{o i n} .8	52 ^h .08	20	8 31 56 ^{h m s} .30	17 29 23 ^{o i n} .6	119 ^h .17
21	6 35 1 ^{h m s} .26	24 23 47 ^{o i n} .3	53 ^h .78	21	8 34 18 ^{h m s} .75	17 17 28 ^{o i n} .6	120 ^h .20
22	6 37 35 ^{h m s} .77	24 18 24 ^{o i n} .9	55 ^h .46	22	8 36 40 ^{h m s} .90	17 5 27 ^{o i n} .4	121 ^h .25
23	6 40 10 ^{h m s} .13	N.24 12 52 ^{o i n} .5	57 ^h .05	23	8 39 2 ^{h m s} .74	N.16 53 19 ^{o i n} .9	122 ^h .27
FRIDAY 10.				SUNDAY 12.			
0	6 42 44 ^{h m s} .34	N.24 7 10 ^{o i n} .2	58 ^h .68	0	8 41 24 ^{h m s} .27	N.16 41 6 ^{o i n} .3	123 ^h .27
1	6 45 18 ^{h m s} .39	24 1 18 ^{o i n} .1	60 ^h .32	1	8 43 43 ^{h m s} .50	16 28 46 ^{o i n} .7	124 ^h .25
2	6 47 52 ^{h m s} .26	23 55 16 ^{o i n} .2	61 ^h .95	2	8 46 6 ^{h m s} .42	16 16 21 ^{o i n} .2	125 ^h .22
3	6 50 25 ^{h m s} .97	23 49 4 ^{o i n} .5	63 ^h .55	3	8 48 27 ^{h m s} .04	16 3 49 ^{o i n} .9	126 ^h .16
4	6 52 59 ^{h m s} .49	23 42 43 ^{o i n} .2	65 ^h .17	4	8 50 47 ^{h m s} .35	15 51 13 ^{o i n} .0	127 ^h .10
5	6 55 32 ^{h m s} .83	23 36 12 ^{o i n} .2	66 ^h .75	5	8 53 7 ^{h m s} .37	15 38 30 ^{o i n} .4	128 ^h .02
6	6 58 5 ^{h m s} .97	23 29 31 ^{o i n} .7	68 ^h .35	6	8 55 27 ^{h m s} .08	15 25 42 ^{o i n} .3	128 ^h .92
7	7 0 38 ^{h m s} .91	23 22 41 ^{o i n} .6	69 ^h .92	7	8 57 46 ^{h m s} .50	15 12 48 ^{o i n} .8	129 ^h .80
8	7 3 11 ^{h m s} .65	23 15 42 ^{o i n} .1	71 ^h .48	8	9 0 5 ^{h m s} .62	14 59 50 ^{o i n} .0	130 ^h .67
9	7 5 44 ^{h m s} .17	23 8 33 ^{o i n} .2	73 ^h .05	9	9 2 24 ^{h m s} .45	14 46 46 ^{o i n} .0	131 ^h .52
10	7 8 16 ^{h m s} .48	23 1 14 ^{o i n} .9	74 ^h .58	10	9 4 42 ^{h m s} .98	14 33 36 ^{o i n} .9	132 ^h .27
11	7 10 48 ^{h m s} .57	22 53 47 ^{o i n} .4	76 ^h .12	11	9 7 1 ^{h m s} .22	14 20 22 ^{o i n} .7	133 ^h .17
12	7 13 20 ^{h m s} .43	22 46 10 ^{o i n} .7	77 ^h .65	12	9 9 19 ^{h m s} .18	14 7 3 ^{o i n} .7	133 ^h .97
13	7 15 52 ^{h m s} .05	22 38 24 ^{o i n} .8	79 ^h .15	13	9 11 36 ^{h m s} .83	13 53 39 ^{o i n} .9	134 ^h .75
14	7 18 23 ^{h m s} .44	22 30 29 ^{o i n} .9	80 ^h .65	14	9 13 54 ^{h m s} .23	13 40 11 ^{o i n} .4	135 ^h .53
15	7 20 54 ^{h m s} .58	22 22 26 ^{o i n} .0	82 ^h .13	15	9 16 11 ^{h m s} .33	13 26 38 ^{o i n} .2	136 ^h .27
16	7 23 25 ^{h m s} .47	22 14 13 ^{o i n} .2	83 ^h .62	16	9 18 28 ^{h m s} .15	13 13 0 ^{o i n} .6	137 ^h .02
17	7 25 56 ^{h m s} .11	22 5 51 ^{o i n} .5	85 ^h .07	17	9 20 44 ^{h m s} .70	12 59 18 ^{o i n} .5	137 ^h .78
18	7 28 26 ^{h m s} .49	21 57 21 ^{o i n} .1	86 ^h .52	18	9 23 0 ^{h m s} .97	12 45 32 ^{o i n} .1	138 ^h .43
19	7 30 56 ^{h m s} .61	21 48 42 ^{o i n} .0	87 ^h .97	19	9 25 16 ^{h m s} .97	12 31 41 ^{o i n} .5	139 ^h .12
20	7 33 26 ^{h m s} .47	21 39 54 ^{o i n} .2	89 ^h .38	20	9 27 30 ^{h m s} .71	12 17 46 ^{o i n} .8	139 ^h .50
21	7 35 56 ^{h m s} .03	21 30 57 ^{o i n} .9	90 ^h .78	21	9 29 48 ^{h m s} .18	12 3 48 ^{o i n} .0	140 ^h .58
22	7 38 25 ^{h m s} .37	21 21 53 ^{o i n} .2	92 ^h .18	22	9 32 3 ^{h m s} .38	11 49 45 ^{o i n} .3	141 ^h .1
23	7 40 54 ^{h m s} .41	21 12 40 ^{o i n} .1	93 ^h .68	23	9 34 18 ^{h m s} .33	11 35 38	
24	7 43 23 ^{h m s} .17	N.21 3 18 ^{o i n} .6		24	9 36 33 ^{h m s} .03	N.11 21 28	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
MONDAY 13.				WEDNESDAY 15.			
	h m s	° ' "	"		h m s	° ' "	"
0	9 36 33.03	N. 11 21 28.5	142.82	0	11 20 37.09	S. 0 41 43.6	153.60
1	9 38 47.48	11 7 14.6	142.92	1	11 22 44.37	0 57 5.2	153.48
2	9 41 1.68	10 32 57.1	143.48	2	11 24 51.62	1 12 26.1	153.35
3	9 43 15.64	10 38 36.2	144.06	3	11 26 58.83	1 27 46.2	153.22
4	9 45 29.35	10 24 11.9	144.58	4	11 29 6.02	1 43 5.5	153.05
5	9 47 42.83	10 9 44.4	145.12	5	11 31 13.19	1 58 23.8	152.88
6	9 49 56.08	9 55 13.7	145.63	6	11 33 20.34	2 13 41.1	152.70
7	9 52 9.09	9 40 39.9	146.12	7	11 35 27.47	2 28 57.3	152.52
8	9 54 21.88	9 26 3.2	146.62	8	11 37 34.60	2 44 12.4	152.38
9	9 56 34.45	9 11 23.5	147.07	9	11 39 41.72	2 59 26.1	152.08
10	9 58 46.80	8 56 41.1	147.52	10	11 41 48.84	3 14 38.6	151.83
11	10 0 58.94	8 41 56.0	147.96	11	11 43 55.97	3 29 49.6	151.58
12	10 3 10.86	8 27 8.3	148.37	12	11 46 3.11	3 44 59.1	151.32
13	10 5 22.58	8 12 18.1	148.77	13	11 48 10.26	4 0 7.0	151.08
14	10 7 34.09	7 57 25.5	149.17	14	11 50 17.43	4 15 13.2	150.78
15	10 9 45.41	7 42 30.5	149.58	15	11 52 24.63	4 30 17.7	150.45
16	10 11 56.53	7 27 33.3	149.98	16	11 54 31.85	4 45 20.4	150.18
17	10 14 7.47	7 12 34.0	150.32	17	11 56 39.10	5 0 21.2	149.80
18	10 16 18.22	6 57 32.7	150.57	18	11 58 46.39	5 15 20.0	149.47
19	10 18 28.79	6 42 29.3	150.87	19	12 0 53.73	5 30 16.8	149.10
20	10 20 39.18	6 27 24.1	151.17	20	12 3 1.10	5 45 11.4	148.78
21	10 22 49.40	6 12 17.1	151.48	21	12 5 8.53	6 0 3.9	148.37
22	10 24 59.45	5 57 8.5	151.72	22	12 7 16.01	6 14 54.1	147.97
23	10 27 9.38	N. 5 41 58.2	151.97	23	12 9 23.55	S. 6 29 41.9	147.57
TUESDAY 14.				THURSDAY 16.			
0	10 29 19.06	N. 5 26 46.4	152.20	0	12 11 31.16	S. 6 44 27.3	147.15
1	10 31 28.64	5 11 33.2	152.43	1	12 13 38.83	6 59 10.2	146.78
2	10 33 38.07	4 56 18.6	152.63	2	12 15 46.56	7 13 50.6	146.38
3	10 35 47.35	4 41 2.8	152.83	3	12 17 54.38	7 28 28.3	145.93
4	10 37 56.50	4 25 45.8	153.00	4	12 20 2.27	7 43 8.3	145.56
5	10 40 5.50	4 10 27.8	153.17	5	12 22 10.25	7 57 35.4	144.88
6	10 42 14.38	3 55 8.8	153.32	6	12 24 18.32	8 12 4.7	144.38
7	10 44 23.13	3 39 48.9	153.47	7	12 26 26.48	8 26 31.0	143.88
8	10 46 31.76	3 24 28.1	153.57	8	12 28 34.73	8 40 54.3	143.35
9	10 48 40.27	3 9 6.7	153.68	9	12 30 43.08	8 55 14.4	142.83
10	10 50 48.67	2 53 44.6	153.77	10	12 32 51.54	9 9 31.4	142.28
11	10 52 56.96	2 38 22.0	153.86	11	12 35 0.11	9 23 45.1	141.72
12	10 55 5.15	2 22 58.9	153.90	12	12 37 8.79	9 37 55.4	141.18
13	10 57 13.24	2 7 35.5	153.97	13	12 39 17.58	9 52 2.3	140.57
14	10 59 21.23	1 52 11.7	153.98	14	12 41 26.48	10 6 5.7	139.97
15	11 1 29.14	1 36 47.8	154.02	15	12 43 35.50	10 20 3.5	139.37
16	11 3 36.96	1 21 23.7	154.02	16	12 45 44.65	10 34 1.7	138.78
17	11 5 44.71	1 5 59.6	154.02	17	12 47 53.93	10 47 54.1	138.18
18	11 7 52.38	0 50 35.5	153.98	18	12 50 3.34	11 1 42.8	137.47
19	11 9 59.98	0 35 11.6	153.97	19	12 52 12.88	11 15 27.6	136.80
20	11 12 7.51	0 19 47.8	153.92	20	12 54 22.57	11 29 8.4	136.18
21	11 14 14.98	N. 0 4 24.3	153.85	21	12 56 32.39	11 42 45.2	135.47
22	11 15 40.40	S. 0 10 56.8	153.77	22	12 58 42.36	11 56 18.0	134.77
23	11 17 7.77	0 26 21.4	153.70	23	12 0 52.47	12 9 46.6	134.06
		S. 0 41 42.4		24	12 3 2.74	12 22 12.0	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>FRIDAY 17.</i>				<i>SUNDAY 19.</i>			
	<i>h m s</i>	<i>S. ° ' "</i>	<i>"</i>		<i>h m s</i>	<i>S. ° ' "</i>	<i>"</i>
0	13 3 2.74	S. 12 23 10.9	132.35	0	14 50 51.37	S. 21 20 19.4	85.18
1	13 5 13.16	12 36 31.0	132.60	1	14 53 10.93	21 28 50.5	83.92
2	13 7 23.74	12 49 46.6	131.87	2	14 55 30.68	21 37 14.0	82.65
3	13 9 34.48	13 2 57.8	131.12	3	14 57 50.61	21 45 29.9	81.37
4	13 11 45.39	13 16 4.5	130.35	4	15 0 10.72	21 53 38.1	80.08
5	13 13 56.45	13 29 6.6	129.57	5	15 2 31.01	22 1 38.6	78.80
6	13 16 7.69	13 42 4.0	128.77	6	15 4 51.47	22 9 31.4	77.48
7	13 18 19.09	13 54 56.6	127.98	7	15 7 12.11	22 17 16.3	76.17
8	13 20 30.67	14 7 44.5	127.15	8	15 9 32.91	22 24 53.3	74.85
9	13 22 42.42	14 20 27.4	126.32	9	15 11 53.89	22 32 22.4	73.52
10	13 24 54.34	14 33 5.3	125.48	10	15 14 15.03	22 39 43.5	72.18
11	13 27 6.45	14 45 38.2	124.62	11	15 16 36.33	22 46 56.6	70.85
12	13 29 18.73	14 58 6.0	123.77	12	15 18 57.78	22 54 1.7	69.48
13	13 31 31.20	15 10 28.6	122.88	13	15 21 19.39	23 0 58.6	68.13
14	13 33 43.85	15 22 45.9	121.98	14	15 23 41.15	23 7 47.4	66.77
15	13 35 56.69	15 34 57.8	121.10	15	15 26 3.05	23 14 28.0	65.40
16	13 38 9.71	15 47 4.4	120.18	16	15 28 25.10	23 21 0.4	64.02
17	13 40 22.93	15 59 5.5	119.27	17	15 30 47.29	23 27 24.5	62.62
18	13 42 36.34	16 11 1.1	118.32	18	15 33 9.62	23 33 40.2	61.25
19	13 44 49.94	16 22 51.0	117.38	19	15 35 32.07	23 39 47.7	59.83
20	13 47 3.74	16 34 35.3	116.43	20	15 37 54.65	23 45 46.7	58.43
21	13 49 17.73	16 46 13.9	115.45	21	15 40 17.36	23 51 37.3	57.02
22	13 51 31.92	16 57 46.6	114.47	22	15 42 40.18	23 57 19.4	55.62
23	13 53 46.30	S. 17 9 13.4	113.48	23	15 45 3.12	S. 24 2 53.1	54.18
<i>SATURDAY 18.</i>				<i>MONDAY 20.</i>			
	<i>h m s</i>	<i>S. ° ' "</i>	<i>"</i>		<i>h m s</i>	<i>S. ° ' "</i>	<i>"</i>
0	13 56 0.89	S. 17 20 34.3	112.48	0	15 47 26.17	S. 24 8 18.2	52.77
1	13 58 15.68	17 31 49.2	111.47	1	15 49 49.33	24 18 34.8	51.32
2	14 0 30.68	17 42 58.0	110.45	2	15 52 12.59	24 18 42.7	49.90
3	14 2 45.87	17 54 0.7	109.40	3	15 54 35.94	24 23 42.1	48.45
4	14 5 1.26	18 4 57.1	108.37	4	15 56 59.38	24 28 32.8	47.00
5	14 7 16.86	18 15 47.3	107.30	5	15 59 22.91	24 33 14.8	45.57
6	14 9 32.66	18 26 31.1	106.22	6	16 1 46.53	24 37 48.2	44.10
7	14 11 48.67	18 37 8.4	105.15	7	16 4 10.21	24 42 12.8	42.65
8	14 14 4.87	18 47 39.3	104.07	8	16 6 33.97	24 46 28.7	41.18
9	14 16 21.28	18 58 3.7	102.95	9	16 8 57.79	24 50 35.8	39.73
10	14 18 37.90	19 8 21.4	101.83	10	16 11 21.67	24 54 34.2	38.25
11	14 20 54.71	19 18 32.4	100.72	11	16 13 45.60	24 58 23.7	36.80
12	14 23 11.73	19 28 36.7	99.58	12	16 16 9.58	25 2 4.5	35.32
13	14 25 28.95	19 38 34.2	98.42	13	16 18 33.60	25 5 36.4	33.85
14	14 27 46.36	19 48 24.7	97.28	14	16 20 57.66	25 8 59.5	32.38
15	14 30 3.98	19 58 8.4	96.12	15	16 23 21.75	25 12 13.8	30.88
16	14 32 21.79	20 7 45.1	94.93	16	16 25 45.87	25 15 19.1	29.42
17	14 34 39.80	20 17 14.7	93.73	17	16 28 10.00	25 18 15.6	27.93
18	14 36 58.02	20 26 37.1	92.55	18	16 30 34.15	25 21 3.2	26.45
19	14 39 16.42	20 35 52.4	91.35	19	16 32 58.31	25 23 41.9	24.97
20	14 41 35.03	20 45 0.5	90.18	20	16 35 22.47	25 26 11.7	23.48
21	14 43 53.82	20 54 1.3	88.92	21	16 37 46.62	25 28 32.6	22.00
22	14 46 12.82	21 2 54.8	87.67	22	16 40 10.77	25 30 44.6	20.52
23	14 48 32.00	21 11 40.8	86.48	23	16 42 34.90	25 32 47.7	19.02
24	14 50 51.37	S. 21 20 19.4		24	16 44 59.00	S. 25 34 41.9	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>TUESDAY 21.</i>				<i>THURSDAY 23.</i>			
	<i>h m s</i>	<i>° ′ ″</i>	<i>″</i>		<i>h m s</i>	<i>° ′ ″</i>	<i>″</i>
0	16 44 59	25 34 41	17.53	0	18 37 54	24 17 0	49.20
1	16 47 23	25 36 27	16.07	1	18 40 10	24 18 5	50.42
2	16 49 47	25 38 3	14.57	2	18 42 26	24 7 2	51.62
3	16 52 11	25 39 30	13.10	3	18 44 42	24 1 53	52.83
4	16 54 35	25 40 49	11.60	4	18 46 57	23 56 36	54.02
5	16 56 58	25 41 59	10.13	5	18 49 12	23 51 11	55.20
6	16 59 22	25 42 59	8.65	6	18 51 26	23 45 40	56.38
7	17 1 46	25 43 51	7.18	7	18 53 41	23 40 2	57.53
8	17 4 10	25 44 34	5.70	8	18 55 55	23 34 17	58.70
9	17 6 33	25 45 9	4.23	9	18 58 9	23 28 25	59.83
10	17 8 57	25 45 34	2.75	10	19 0 22	23 22 26	60.97
11	17 11 20	25 45 51	1.30	11	19 2 35	23 16 20	62.10
12	17 13 44	25 45 58	0.17	12	19 4 48	23 10 7	63.20
13	17 16 7	25 45 57	1.63	13	19 7 1	23 3 48	64.30
14	17 18 30	25 45 48	3.08	14	19 9 13	22 57 22	65.40
15	17 20 53	25 45 29	4.53	15	19 11 25	22 50 50	66.48
16	17 23 16	25 45 2	5.98	16	19 13 36	22 44 11	67.55
17	17 25 39	25 44 26	7.42	17	19 15 48	22 37 26	68.62
18	17 28 2	25 43 41	8.88	18	19 17 59	22 30 34	69.67
19	17 30 24	25 42 48	10.30	19	19 20 9	22 23 36	70.72
20	17 32 47	25 41 46	11.73	20	19 22 20	22 16 32	71.73
21	17 35 9	25 40 36	13.17	21	19 24 30	22 9 21	72.77
22	17 37 31	25 39 17	14.60	22	19 26 40	22 2 5	73.77
23	17 39 53	25 37 49	16.00	23	19 28 49	21 54 42	74.78
<i>WEDNESDAY 22.</i>				<i>FRIDAY 24.</i>			
	<i>h m s</i>	<i>° ′ ″</i>	<i>″</i>		<i>h m s</i>	<i>° ′ ″</i>	<i>″</i>
0	17 42 15	25 36 13	17.42	0	19 30 58	21 47 13	75.77
1	17 44 36	25 34 29	18.83	1	19 33 7	21 39 39	76.75
2	17 46 58	25 32 36	20.22	2	19 35 16	21 31 58	77.72
3	17 49 19	25 30 34	21.62	3	19 37 24	21 24 12	78.68
4	17 51 40	25 28 25	23.00	4	19 39 32	21 16 20	79.62
5	17 54 1	25 26 7	24.38	5	19 41 39	21 8 22	80.57
6	17 56 21	25 23 40	25.77	6	19 43 46	21 0 19	81.50
7	17 58 42	25 21 6	27.13	7	19 45 53	20 52 10	82.40
8	18 1 2	25 18 23	28.48	8	19 48 0	20 43 55	83.32
9	18 3 22	25 15 32	29.85	9	19 50 6	20 35 35	84.22
10	18 5 42	25 12 33	31.18	10	19 52 12	20 27 10	85.10
11	18 8 2	25 9 26	32.58	11	19 54 18	20 18 39	85.97
12	18 10 21	25 6 11	33.85	12	19 56 23	20 10 4	86.83
13	18 12 40	25 2 48	35.18	13	19 58 28	20 1 23	87.68
14	18 14 59	24 59 17	36.50	14	20 0 33	19 52 37	88.53
15	18 17 18	24 55 38	37.80	15	20 2 37	19 43 45	89.37
16	18 19 36	24 51 51	39.10	16	20 4 41	19 34 49	90.20
17	18 21 54	24 47 56	40.38	17	20 6 45	19 25 48	91.00
18	18 24 12	24 43 54	41.67	18	20 8 48	19 16 42	91.80
19	18 26 30	24 39 44	42.95	19	20 10 51	19 7 31	92.60
20	18 28 47	24 35 26	44.22	20	20 12 54	18 58 16	93.38
21	18 31 4	24 31 1	45.47	21	20 14 57	18 48 55	94.17
22	18 33 21	24 26 28	46.72	22	20 16 59	18 39 30	94.92
23	18 35 38	24 21 48	47.97	23	20 19 1	18 30 1	95.67
24	18 37 54	24 17 0		24	20 21 0	18 20 0	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
SATURDAY 25.				MONDAY 27.			
	^h ^m ^s	^{S.} ^o ['] ["]	["]		^h ^m ^s	^{S.} ^o ['] ["]	["]
0	20 21 2.85	S. 18 20 27.2	96.42	0	21 53 10.09	S. 9 31 11.5	121.32
1	20 23 4.15	18 10 48.7	97.15	1	21 55 0.00	9 19 3.6	121.63
2	20 25 5.15	18 1 5.8	97.87	2	21 56 49.73	9 6 52.8	121.93
3	20 27 5.85	17 51 18.6	98.58	3	21 58 39.34	8 54 42.2	122.23
4	20 29 6.26	17 41 27.1	99.28	4	22 0 28.79	8 42 28.7	122.53
5	20 31 6.37	17 31 31.4	99.98	5	22 2 18.09	8 30 13.5	122.83
6	20 33 6.19	17 21 31.5	100.65	6	22 4 7.24	8 17 56.5	123.12
7	20 35 5.73	17 11 27.6	101.33	7	22 5 56.26	8 5 37.8	123.38
8	20 37 4.97	17 1 19.6	102.00	8	22 7 45.14	7 53 17.5	123.65
9	20 39 3.93	16 51 7.6	102.65	9	22 9 33.89	7 40 55.6	123.92
10	20 41 2.61	16 40 51.7	103.30	10	22 11 22.51	7 28 32.1	124.17
11	20 43 1.01	16 30 31.9	103.93	11	22 13 11.01	7 16 7.1	124.42
12	20 44 59.13	16 20 8.3	104.55	12	22 14 59.39	7 3 40.6	124.65
13	20 46 56.98	16 9 41.0	105.17	13	22 16 47.65	6 51 12.7	124.88
14	20 48 54.55	15 59 10.0	105.78	14	22 18 35.80	6 38 43.4	125.10
15	20 50 51.85	15 48 35.3	106.37	15	22 20 23.85	6 26 12.8	125.32
16	20 52 48.88	15 37 57.1	106.97	16	22 22 11.79	6 13 40.9	125.53
17	20 54 45.65	15 27 15.3	107.55	17	22 23 59.63	6 1 7.7	125.75
18	20 56 42.15	15 16 30.0	108.12	18	22 25 47.37	5 48 33.2	125.93
19	20 58 38.40	15 5 41.3	108.67	19	22 27 35.02	5 35 57.6	126.15
20	21 0 34.38	14 54 49.3	109.23	20	22 29 22.59	5 23 20.7	126.32
21	21 2 30.11	14 43 53.9	109.77	21	22 31 10.07	5 10 42.8	126.50
22	21 4 25.60	14 32 55.3	110.32	22	22 32 57.47	4 58 3.8	126.67
23	21 6 20.83	S. 14 21 53.4	110.83	23	22 34 44.80	S. 4 45 23.8	126.85
SUNDAY 26.				TUESDAY 28.			
	^h ^m ^s	^{S.} ^o ['] ["]	["]		^h ^m ^s	^{S.} ^o ['] ["]	["]
0	21 8 15.81	S. 14 10 48.4	111.35	0	22 36 32.05	S. 4 32 42.7	127.02
1	21 10 10.56	13 59 40.3	111.87	1	22 38 19.24	4 20 0.6	127.16
2	21 12 5.06	13 48 29.1	112.37	2	22 40 6.36	4 7 17.7	127.32
3	21 13 59.33	13 37 14.9	112.87	3	22 41 53.43	3 54 33.8	127.45
4	21 15 53.36	13 25 57.7	113.33	4	22 43 40.44	3 41 49.1	127.58
5	21 17 47.17	13 14 37.7	113.82	5	22 45 27.40	3 29 3.6	127.72
6	21 19 40.74	13 3 14.8	114.28	6	22 47 14.31	3 16 17.3	127.85
7	21 21 34.10	12 51 49.1	114.73	7	22 49 1.18	3 3 30.2	127.95
8	21 23 27.23	12 40 20.7	115.20	8	22 50 48.01	2 50 42.5	128.05
9	21 25 20.14	12 28 49.5	115.63	9	22 52 34.81	2 37 54.2	128.17
10	21 27 12.85	12 17 15.7	116.05	10	22 54 21.57	2 25 5.2	128.27
11	21 29 5.34	12 5 39.4	116.50	11	22 56 8.31	2 12 15.6	128.35
12	21 30 57.62	11 54 0.4	116.90	12	22 57 55.03	1 59 25.5	128.43
13	21 32 49.70	11 42 19.0	117.32	13	22 59 41.73	1 46 34.9	128.50
14	21 34 41.57	11 30 35.1	117.72	14	23 1 28.41	1 33 43.9	128.58
15	21 36 33.25	11 18 48.8	118.10	15	23 3 15.08	1 20 52.4	128.63
16	21 38 24.74	11 7 0.2	118.50	16	23 5 1.75	1 8 0.6	128.70
17	21 40 16.04	10 55 9.2	118.87	17	23 6 48.42	0 55 8.4	128.75
18	21 42 7.15	10 43 16.0	119.25	18	23 8 35.08	0 42 15.9	128.80
19	21 43 58.07	10 31 20.5	119.60	19	23 10 21.76		128.85
20	21 45 48.82	10 19 22.9	119.97	20	23 12 8.45		
21	21 47 39.39	10 7 23.1	120.30	21	23 13 55.15		
22	21 49 29.79	9 55 21.3	120.65	22	23 15 4		
23	21 51 20.02	9 43 17.4	120.98	23	23 17 4		
24	21 53 10.09	S. 9 31 11.5		24	23 19 1		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>WEDNESDAY 29.</i>				<i>THURSDAY 30.</i>			
	^h ^m ^s	^o ⁱ ["]	["]		^h ^m ^s	^o ⁱ ["]	["]
0	23 19 15.39	N. 0 35 3.8	128.95	0	0 2 17.66	N. 5 43 18.7	127.23
1	23 21 2.20	0 47 57.5	128.97	1	0 4 6.54	5 56 2.1	127.07
2	23 22 49.05	1 0 51.3	128.95	2	0 5 55.57	6 8 44.5	126.92
3	23 24 35.93	1 13 45.0	128.93	3	0 7 44.74	6 21 26.0	126.75
4	23 26 22.86	1 26 38.6	128.93	4	0 9 34.06	6 34 6.5	126.57
5	23 28 9.84	1 39 32.2	128.90	5	0 11 23.54	6 46 45.9	126.38
6	23 29 56.88	1 52 25.6	128.88	6	0 13 13.17	6 59 24.2	126.18
7	23 31 43.97	2 5 18.9	128.83	7	0 15 2.97	7 12 1.3	126.00
8	23 33 31.13	2 18 11.9	128.80	8	0 16 52.93	7 24 37.3	125.80
9	23 35 18.36	2 31 4.7	128.75	9	0 18 43.06	7 37 12.1	125.58
10	23 37 5.65	2 43 57.2	128.68	10	0 20 33.37	7 49 45.6	125.35
11	23 38 53.02	2 56 49.3	128.63	11	0 22 23.87	8 2 17.7	125.13
12	23 40 40.47	3 9 41.1	128.55	12	0 24 14.54	8 14 48.5	124.88
13	23 42 28.00	3 22 32.4	128.48	13	0 26 5.40	8 27 17.8	124.65
14	23 44 15.62	3 35 23.3	128.40	14	0 27 56.46	8 39 45.7	124.40
15	23 46 3.34	3 48 13.7	128.30	15	0 29 47.71	8 52 12.1	124.15
16	23 47 51.15	4 1 3.5	128.22	16	0 31 39.17	9 4 37.0	123.87
17	23 49 39.06	4 13 52.8	128.12	17	0 33 30.84	9 17 0.2	123.60
18	23 51 27.08	4 26 41.5	128.02	18	0 35 22.71	9 29 21.8	123.32
19	23 53 15.21	4 39 29.6	127.88	19	0 37 14.80	9 41 41.7	123.03
20	23 55 3.45	4 52 16.9	127.77	20	0 39 7.11	9 53 59.9	122.73
21	23 56 51.82	5 5 3.5	127.65	21	0 40 59.65	10 6 16.3	122.43
22	23 58 40.30	5 17 49.4	127.52	22	0 42 52.41	10 18 30.9	122.10
23	0 0 28.91	5 30 34.5	127.37	23	0 44 45.41	10 30 43.5	121.80
24	0 2 17.66	N. 5 43 18.7		24	0 46 38.64	N. 10 42 54.3	

PHASES OF THE MOON.

● New Moon	- - - - -	^d ^h ^m	8 10 13.6
☽ First Quarter	- - - - -		15 4 51.9
○ Full Moon	- - - - -		22 9 21.6
☾ Last Quarter	- - - - -		30 11 40.5

☾ Perigee	- - - - -	^d ^h	12 5
☾ Apogee	- - - - -		27 20

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Noon.			III ^h .			VI ^h .			IX ^h .			P. L. of diff.			
			°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	
1	Saturn	W.	59	36	51	8038	61	6	17	3034	62	35	48	3030	64	5	24	3026
	Jupiter	W.	51	3	11	3032	52	32	44	3028	54	2	22	3024	55	32	5	3020
	α Aquilæ	W.	48	7	6	4175	49	15	56	4122	50	25	37	4073	51	36	5	4026
	α Arietis	E.	52	29	9	3082	51	0	37	3080	49	32	3	3078	48	3	26	3074
	SUN	E.	87	39	50	3429	86	18	6	3425	84	56	18	3420	83	34	24	3415
2	Saturn	W.	71	34	58	2996	73	5	16	2989	74	35	43	2981	76	6	20	2973
	Jupiter	W.	63	2	14	2989	64	32	40	2983	66	3	14	2975	67	33	58	2966
	α Aquilæ	W.	57	39	1	3833	58	53	29	3800	60	8	31	3769	61	24	5	3739
	α Arietis	E.	40	39	14	3054	39	10	8	3050	37	40	57	3045	36	11	40	3040
	SUN	E.	76	43	22	3385	75	20	48	3375	73	58	3	3367	72	35	9	3359
3	Saturn	W.	83	42	7	2927	85	13	52	2916	86	45	51	2905	88	18	3	2894
	Jupiter	W.	75	10	23	2920	76	42	17	2910	78	14	23	2898	79	46	44	2887
	α Aquilæ	W.	67	49	27	3606	69	7	55	3583	70	26	48	3560	71	46	6	3537
	Fomalhaut	W.	43	19	49	3896	44	33	13	3834	45	47	40	3779	47	3	4	3725
	α Pegasi	W.	20	56	18	4428	22	1	14	4231	23	9	11	4067	24	19	45	3926
4	α Arietis	E.	28	43	50	3020	27	14	2	3018	25	44	11	3016	24	14	18	3017
	SUN	E.	65	38	0	3308	64	13	58	3297	62	49	43	3286	61	25	15	3274
	Saturn	W.	96	2	49	2834	97	36	33	2821	99	10	34	2807	100	44	53	2794
	Jupiter	W.	87	32	12	2827	89	6	5	2814	90	40	15	2801	92	14	42	2787
	α Aquilæ	W.	78	28	35	3435	79	50	12	3416	81	12	10	3398	82	34	29	3381
5	Fomalhaut	W.	53	33	7	3505	54	53	26	3467	56	14	27	3431	57	36	8	3397
	α Pegasi	W.	30	42	28	3461	32	3	36	3397	33	25	56	3340	34	49	21	3287
	SUN	E.	54	19	15	3209	52	53	17	3195	51	27	2	3181	50	0	30	3167
	Jupiter	W.	100	11	29	2717	101	47	47	2702	103	24	24	2688	105	1	20	2673
	α Aquilæ	W.	89	30	49	3301	90	54	59	3288	92	19	25	3275	93	44	6	3262
6	Fomalhaut	W.	64	33	47	3247	65	59	1	3220	67	24	47	3194	68	51	3	3169
	α Pegasi	W.	42	0	20	3080	43	28	54	3046	44	58	10	3014	46	28	5	2985
	SUN	E.	42	43	33	3094	41	15	16	3079	39	46	41	3064	38	17	47	3049
	Fomalhaut	W.	76	9	35	3056	77	38	38	3037	79	8	5	3018	80	37	56	2999
	α Pegasi	W.	54	6	37	2852	55	39	58	2828	57	13	50	2805	58	48	11	2784
10	SUN	E.	30	48	44	2977	29	18	2	2962	27	47	2	2949	26	15	45	2937
	SUN	W.	20	38	24	2599	22	17	20	2589	23	56	30	2579	25	35	54	2570
	Regulus	E.	47	53	46	2275	46	7	10	2270	44	20	26	2266	42	33	37	2262
	Spica ♀	E.	101	56	1	2266	100	9	11	2260	98	22	13	2255	96	35	8	2249
	SUN	W.	33	55	30	2539	35	35	49	2536	37	16	12	2533	38	56	40	2530
11	Regulus	E.	33	38	28	2255	31	51	22	2255	30	4	16	2257	28	17	13	2259
	Spica ♀	E.	87	38	2	2232	85	50	22	2230	84	2	39	2227	82	14	52	2226
	SUN	W.	47	19	44	2523	49	0	25	2524	50	41	5	2525	52	21	44	2525
	Venus	W.	22	9	52	2599	23	48	48	2599	25	27	44	2600	27	6	39	2601
	Spica ♀	E.	73	15	39	2225	71	27	48	2225	69	39	58	2226	67	52	9	2228
13	SUN	W.	60	44	34	2535	62	24	59	2538	64	5	19	2540	65	45	36	2545
	Venus	W.	35	20	39	2612	36	59	18	2615	38	37	52	2619	40	16	21	2622
	Spica ♀	E.	58	53	50	2240	57	6	22	2243	55	18	58	2247	53	31	40	2248
	Antares	E.	104	34	53	2231	102	47	12	2234	100	59	35	2237	98			
	SUN	W.	74	5	38	2565	75	45	21	2570	77	24	57	2575				

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.	P.L. of diff.	XV ^h .	P.L. of diff.	XVIII ^h .	P.L. of diff.	XXI ^h .	P.L. of diff.
1	Saturn W.	65° 35' 5"	3020	67° 4' 53"	3015	68° 34' 47"	3009	70° 4' 49"	3003
	Jupiter W.	57 1 53	3014	58 31 48	3009	60 1 49	3003	61 31 58	2997
	α Aquilæ W.	52 47 19	3983	53 59 15	3942	55 11 52	3904	56 25 8	3867
	α Arietis E.	46 34 44	3071	45 5 59	3067	43 37 9	3063	42 8 14	3059
	SUN E.	82 12 25	3410	80 50 20	3404	79 28 8	3398	78 5 49	3391
2	Saturn W.	77 37 7	2964	79 8 5	2955	80 39 14	2946	82 10 34	2936
	Jupiter W.	69 4 53	2958	70 35 58	2950	72 7 14	2940	73 38 43	2931
	α Aquilæ W.	62 40 11	3710	63 56 47	3682	65 13 53	3657	66 31 26	3631
	α Arietis E.	34 42 17	3035	33 12 48	3031	31 43 14	3026	30 13 34	3023
	SUN E.	71 12 6	3349	69 48 51	3340	68 25 26	3330	67 1 49	3319
3	Saturn W.	89 50 30	2882	91 23 12	2871	92 56 8	2859	94 29 20	2846
	Jupiter W.	81 19 19	2876	82 52 9	2864	84 25 14	2852	85 58 35	2839
	α Aquilæ W.	73 5 49	3515	74 25 56	3494	75 46 27	3474	77 7 20	3455
	Fomalhaut W.	48 19 25	3676	49 36 37	3629	50 54 40	3585	52 13 31	3544
	α Pegasi W.	25 32 38	3807	26 47 33	3702	28 4 18	3612	29 22 39	3532
	α Arietis E.	22 44 26	3019	21 14 37	3026	19 44 56	3035	18 15 26	3051
	SUN E.	60 0 33	3261	58 35 36	3249	57 10 25	3236	55 44 58	3222
4	Saturn W.	102 19 29	2781	103 54 22	2766	105 29 34	2753	107 5 4	2738
	Jupiter W.	93 49 27	2773	95 24 30	2759	96 59 51	2745	98 35 31	2731
	α Aquilæ W.	83 57 7	3364	85 20 5	3347	86 43 22	3331	88 6 57	3317
	Fomalhaut W.	58 58 28	3365	60 21 25	3333	61 44 58	3304	63 9 5	3274
	α Pegasi W.	36 13 48	3240	37 39 10	3195	39 5 25	3153	40 32 30	3116
	SUN E.	48 33 42	3153	47 6 36	3138	45 39 13	3124	44 11 32	3109
5	Jupiter W.	106 38 36	2658	108 16 12	2644	109 54 7	2629	111 32 23	2614
	α Aquilæ W.	95 9 2	3250	96 34 12	3238	97 59 36	3229	99 25 11	3219
	Fomalhaut W.	70 17 49	3145	71 45 4	3121	73 12 48	3100	74 40 58	3078
	α Pegasi W.	47 58 37	2955	49 29 46	2927	51 1 30	2910	52 33 48	2877
	SUN E.	36 48 35	3034	35 19 5	3019	33 49 16	3005	32 19 10	2990
6	Fomalhaut W.	82 8 10	2980	83 38 47	2963	85 9 46	2948	86 41 4	2932
	α Pegasi W.	60 23 0	2763	61 58 17	2741	63 34 2	2722	65 10 12	2703
	SUN E.	24 44 13	2924	23 12 25	2914	21 40 24	2903	20 8 9	2893
10	SUN W.	27 15 30	2562	28 55 17	2556	30 35 13	2549	32 15 18	2544
	Regulus E.	40 46 42	2260	38 59 43	2257	37 12 40	2256	35 25 35	2254
	Spica ♀ E.	94 47 54	2246	93 0 35	2241	91 13 9	2238	89 25 38	2235
11	SUN W.	40 37 12	2527	42 17 48	2526	43 58 25	2525	45 39 3	2523
	Regulus E.	26 30 13	2264	24 43 21	2270	22 56 37	2277	21 10 4	2288
	Spica ♀ E.	80 27 4	2225	78 39 14	2225	76 51 23	2224	75 3 31	2224
12	SUN W.	54 2 23	2526	55 43 0	2528	57 23 34	2530	59 4 6	2533
	Venus W.	28 45 32	2603	30 24 23	2604	32 3 12	2607	33 41 57	2610
	Spica ♀ E.	66 4 23	2229	64 16 39	2233	62 28 59	2234	60 41 22	2237
13	SUN W.	67 25 47	2548	69 5 54	2553	70 45 54	2556	72 25 49	2561
	Venus W.	41 54 46	2626	43 33 5	2631	45 11 18	2635	46 49 25	2640
	Spica ♀ E.	51 44 28	2256	49 57 23	2260	48 10 24	2264	46 23 32	2269
	E.	97 24 36	2245	95 37 15	2248	93 49 59	2253	92 2 50	2256
1		91 43 48	2586	82 23 2	2591	84 2 9	2597	85 41 8	2603

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.			Midnight.			P.L. of diff.	XV ^h .			P.L. of diff.	XVIII ^h .			P.L. of diff.	XXI ^h .			P.L. of diff.		
				°	'	"		°	'	"		°	'	"		°	'	"			
14	Venus	W.	54	58	23	2666		56	35	48	2672		58	13	6	2678		59	50	16	2684
	Regulus	W.	17	7	12	2371		18	51	29	2362		20	35	59	2355		22	20	39	2351
	Spica η	E.	37	31	11	2300		35	45	11	2306		33	59	20	2313		32	13	40	2322
	Antares	E.	83	8	42	2281		81	22	14	2286		79	35	54	2292		77	49	42	2297
15	SUN	W.	93	54	1	2634		95	32	10	2641		97	10	10	2647		98	48	1	2653
	Venus	W.	67	54	3	2716		69	30	22	2723		71	6	32	2729		72	42	34	2736
	Regulus	W.	31	4	26	2356		32	49	4	2360		34	33	37	2363		36	18	5	2368
	Spica η	E.	23	28	30	2372		21	44	15	2385		20	0	19	2402		18	16	47	2420
	Antares	E.	69	0	46	2326		67	15	24	2333		65	30	12	2339		63	45	9	2345
	Saturn	E.	104	5	0	2306		102	19	9	2312		100	33	27	2318		98	47	54	2324
	Jupiter	E.	112	18	22	2294		110	32	14	2300		108	46	14	2307		107	0	24	2313
16	SUN	W.	106	54	59	2688		108	31	55	2696		110	8	40	2703		111	45	16	2711
	Venus	W.	80	40	21	2772		82	15	26	2779		83	50	21	2786		85	25	7	2795
	Regulus	W.	44	58	42	2393		46	42	26	2399		48	26	2	2405		50	9	30	2411
	Antares	E.	55	2	12	2378		53	18	5	2385		51	34	8	2391		49	50	21	2398
	Saturn	E.	90	2	27	2357		88	17	50	2363		86	33	22	2370		84	49	4	2377
	Jupiter	E.	98	13	30	2344		96	28	35	2351		94	43	50	2357		92	59	14	2364
17	SUN	W.	119	45	47	2749		121	21	22	2756		122	56	48	2765		124	32	2	2772
	Venus	W.	93	16	24	2833		94	50	9	2842		96	23	43	2849		97	57	7	2857
	Regulus	W.	58	44	33	2444		60	27	5	2450		62	9	28	2457		63	51	41	2465
	Antares	E.	41	13	55	2434		39	31	8	2441		37	48	32	2448		36	6	6	2456
	Saturn	E.	76	10	4	2412		74	26	46	2419		72	43	38	2427		71	0	41	2434
	Jupiter	E.	84	18	43	2398		82	35	6	2406		80	51	40	2413		79	8	24	2421
18	SUN	W.	132	25	39	2813		133	59	50	2822		135	33	49	2830		137	7	38	2839
	Venus	W.	105	41	30	2899		107	13	50	2908		108	45	59	2916		110	17	57	2925
	Regulus	W.	72	20	15	2501		74	1	27	2509		75	42	27	2516		77	23	18	2525
	Antares	E.	27	36	38	2495		25	55	18	2503		24	14	9	2511		22	33	11	2520
	Saturn	E.	62	28	32	2471		60	46	38	2479		59	4	55	2487		57	23	24	2495
	Jupiter	E.	70	34	40	2458		68	52	27	2465		67	10	25	2472		65	28	33	2481
	α Aquilæ	E.	83	30	6	3059		82	1	6	3072		80	32	22	3085		79	3	54	3099
19	Regulus	W.	85	44	45	2564		87	24	29	2573		89	4	1	2581		90	43	22	2590
	Spica η	W.	31	43	26	2580		33	22	49	2585		35	2	4	2592		36	41	10	2600
	Saturn	E.	48	58	32	2535		47	18	8	2543		45	37	55	2553		43	57	55	2561
	Jupiter	E.	57	2	1	2520		55	21	16	2528		53	40	42	2537		52	0	20	2546
	α Aquilæ	E.	71	46	23	3188		70	19	59	3210		68	54	2	3234		67	28	33	3258
20	Regulus	W.	98	57	9	2634		100	35	18	2643		102	13	14	2652		103	50	59	2661
	Spica η	W.	44	54	6	2638		46	32	9	2646		48	10	1	2655		49	47	42	2663
	Saturn	E.	35	40	52	2605		34	2	4	2615		32	23	29	2624		30	45	7	2634
	Jupiter	E.	43	41	26	2588		42	2	15	2598		40	23	17	2606		38	44	30	2615
	α Aquilæ	E.	60	28	54	3407		59	6	46	3444		57	45	19	3482		56	24	35	3525
	Fomalhaut	E.	84	5	2	3040		82	35	39	3052		81	6	31	3065		79	37	39	3079
21	Spica η	W.	57	53	8	2708		59	29	37	2717		61	5	54	2726		62	41	59	2736
	Saturn	E.	22	36	33	2684		20	59	32	2695		19	22	45	2706		17	46	13	2718
	Jupiter	E.	30	33	41	2661		28	56	9	2670		27	18	49	2680		25	41	42	2690
	α Aquilæ	E.	49	53	33	3795		48	38	15	3850		47	24	4	3921		46	11	5	3998
	Fomalhaut	E.	72	17	46	3158		70	50	47	3177		69	24	11	3197		67	57	58	3218

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.			III ^h .			VI ^h .			IX ^h .						
		°	'	"	P.L. of diff.	°	'	"	P.L. of diff.	°	'	"	P.L. of diff.				
22	Spica η W.	64	17	51	2745	65	53	31	2755	67	28	58	2764	69	4	13	2774
	Antares W.	18	32	22	2743	20	8	5	2752	21	43	36	2760	23	18	56	2769
	Fomalhaut E.	66	32	10	2829	65	6	47	2863	63	41	52	2886	62	17	24	2812
	α Pegasi E.	86	18	18	2885	84	45	40	2895	83	13	15	2906	81	41	4	2917
23	Spica η W.	76	57	18	2822	78	31	17	2831	80	5	4	2841	81	38	39	2851
	Antares W.	31	12	31	2817	32	46	37	2827	34	20	30	2835	35	54	12	2845
	Fomalhaut E.	55	23	2	2463	54	1	57	2498	52	41	31	2538	51	21	49	2578
	α Pegasi E.	74	3	43	2975	72	32	59	2988	71	2	31	3000	69	32	18	3013
24	Spica η W.	89	23	28	2898	90	55	50	2907	92	28	0	2916	93	59	59	2924
	Antares W.	43	39	36	2892	45	12	5	2901	46	44	23	2910	48	16	29	2919
	Fomalhaut E.	44	55	29	2835	43	41	3	2900	42	27	43	2969	41	15	32	2966
	α Pegasi E.	62	5	27	3084	60	36	58	3098	59	8	46	3114	57	40	53	3129
	α Arietis E.	104	11	41	2908	102	39	32	2916	101	7	33	2925	99	35	46	2935
25	Antares W.	55	54	15	2961	57	25	17	2969	58	56	9	2976	60	26	52	2984
	Saturn W.	21	31	44	2943	23	3	9	2950	24	34	25	2957	26	5	32	2963
	Jupiter W.	13	39	5	2918	15	11	1	2926	16	42	47	2933	18	14	24	2941
	α Pegasi E.	50	26	30	3219	49	0	43	3228	47	35	19	3260	46	10	21	3282
	α Arietis E.	91	59	35	2975	90	28	51	2984	88	58	18	2991	87	27	54	2999
26	Antares W.	67	58	9	3018	69	28	0	3023	70	57	44	3029	72	27	21	3035
	Saturn W.	33	39	6	2994	35	9	26	3001	36	39	38	3006	38	9	44	3010
	Jupiter W.	25	50	13	2974	27	20	59	2980	28	51	37	2985	30	22	8	2990
	α Pegasi E.	39	12	28	3417	37	50	31	3451	36	29	12	3488	35	8	34	3528
	α Arietis E.	79	58	11	3033	78	28	39	3039	76	59	15	3045	75	29	58	3051
	SUN E.	139	4	57	3380	137	42	18	3386	136	19	45	3392	134	57	19	3398
27	Antares W.	79	53	53	3056	81	22	57	3060	82	51	56	3063	84	20	51	3065
	Saturn W.	45	38	46	3031	47	8	20	3035	48	37	50	3038	50	7	16	3040
	Jupiter W.	37	53	14	3011	39	23	13	3015	40	53	7	3018	42	22	58	3021
	α Pegasi E.	28	38	22	3818	27	23	38	3902	26	10	20	3999	24	58	39	4112
	α Arietis E.	68	5	9	3074	66	36	28	3078	65	7	51	3081	63	39	18	3084
	SUN E.	128	6	38	3421	126	44	45	3423	125	22	55	3426	124	1	8	3430
28	Antares W.	91	44	51	3072	93	13	35	3073	94	42	18	3072	96	11	2	3071
	Saturn W.	57	33	51	3047	59	3	6	3047	60	32	21	3046	62	1	37	3045
	Jupiter W.	49	51	33	3026	51	21	13	3027	52	50	52	3026	54	20	32	3026
	α Arietis E.	56	17	24	3094	54	49	7	3096	53	20	52	3096	51	52	37	3096
	SUN E.	117	12	54	3437	115	51	19	3437	114	29	44	3436	113	8	8	3436
	29	Saturn W.	69	28	21	3035	70	57	50	3031	72	27	24	3027	73	57	3
Jupiter W.		61	49	15	3015	63	19	9	3012	64	49	7	3008	66	19	10	3004
α Aquilæ W.		54	22	43	3952	55	35	10	3917	56	48	13	3884	58	1	49	3854
α Arietis E.		44	31	22	3093	43	3	4	3091	41	34	43	3090	40	6	21	3087
SUN E.		106	19	45	3423	104	57	55	3420	103	36	1	3416	102	14	2	3411
30	Saturn W.	81	26	49	2995	82	57	8	2987	84	27	37	2980	85	58	15	2972
	Jupiter W.	73	50	57	2975	75	21	41	2968	76	52	34	2960	78	23	37	2952
	α Aquilæ W.	64	17	15	3720	65	33	41	3695	66	50	33	3672	68	7	50	3652
	α Arietis E.	32	43	48	3075	31	15	8	3074	29	46	27	3071	28	17	40	3062
	SUN E.	95	22	35	3380	93	59	56	3371	92	37	6	3364	91			

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.	P. L. of diff.	XV ^h .			P. L. of diff.	XVIII ^h .			P. L. of diff.	XXI ^h .			P. L. of diff.
				°	'	"		°	'	"		°	'	"	
22	Spica η W.	70 39 15	2784	72 14 4	2793	73 48 41	2802	75 23 6	2812						
	Antares W.	24 54 4	2779	26 28 59	2789	28 3 42	2798	29 38 12	2807						
	Fomalhaut E.	60 53 26	3339	59 29 59	3368	58 7 6	3397	56 44 46	3429						
	α Pegasi E.	80 9 7	2928	78 37 24	2939	77 5 55	2951	75 34 41	2964						
23	Spica η W.	83 12 1	2860	84 45 11	2870	86 18 8	2879	87 50 54	2888						
	Antares W.	37 27 41	2855	39 0 58	2865	40 34 2	2873	42 6 55	2883						
	Fomalhaut E.	50 2 51	3622	48 44 41	3670	47 27 22	3721	46 10 57	3775						
	α Pegasi E.	68 2 22	3027	66 32 43	3041	65 8 21	3054	63 84 15	3069						
24	Spica η W.	95 31 47	2934	97 3 23	2943	98 34 48	2950	100 6 3	2959						
	Antares W.	49 48 24	2928	51 20 8	2936	52 51 41	2945	54 23 3	2953						
	Fomalhaut E.	40 4 38	4129	38 55 4	4221	37 46 58	4322	36 40 26	4425						
	α Pegasi E.	56 13 19	3146	54 46 5	3163	53 19 12	3181	51 52 40	3199						
	α Arietis E.	98 4 11	2943	96 32 46	2951	95 1 32	2959	93 30 28	2968						
25	Antares W.	61 57 25	2991	63 27 49	2998	64 58 4	3005	66 28 11	3012						
	Saturn W.	27 36 31	2970	29 7 22	2977	30 38 4	2982	32 8 39	2989						
	Jupiter W.	19 45 51	2948	21 17 9	2954	22 48 19	2961	24 19 20	2968						
	α Pegasi E.	44 45 48	3305	43 21 42	3321	41 58 6	3358	40 35 1	3386						
	α Arietis E.	85 57 40	3006	84 27 35	3014	82 57 39	3020	81 27 51	3026						
26	Antares W.	73 56 51	3039	75 26 15	3044	76 55 33	3048	78 24 46	3053						
	Saturn W.	39 39 44	3016	41 9 37	3020	42 39 25	3024	44 9 8	3028						
	Jupiter W.	31 52 33	2995	33 22 52	3000	34 53 5	3005	36 23 12	3009						
	α Pegasi E.	33 48 41	3574	32 29 38	3624	31 11 30	3680	29 54 22	3745						
	α Arietis E.	74 0 48	3056	72 31 44	3061	71 2 47	3065	69 33 55	3070						
	Sun E.	133 35 0	3402	132 12 46	3407	130 50 38	3412	129 28 35	3417						
27	Antares W.	85 49 44	3068	87 18 33	3069	88 47 21	3071	90 16 6	3071						
	Saturn W.	51 36 39	3042	53 6 0	3044	54 35 18	3045	56 4 33	3046						
	Jupiter W.	43 52 45	3022	45 22 30	3025	46 52 12	3026	48 21 53	3026						
	α Pegasi E.	23 48 49	4246	22 41 6	4406	21 35 50	4597	20 33 23	4820						
	α Arietis E.	62 10 49	3087	60 42 24	3090	59 14 2	3092	57 45 42	3093						
	SUN E.	122 39 25	3432	121 17 45	3433	119 56 6	3435	118 34 29	3437						
28	Antares W.	97 39 47	3069	99 8 34	3069	100 37 22	3066	102 6 13	3064						
	Saturn W.	63 30 54	3044	65 0 12	3043	66 29 32	3040	67 58 55	3038						
	Jupiter W.	55 50 13	3025	57 19 55	3023	58 49 39	3022	60 19 25	3018						
	α Arietis E.	50 24 23	3096	48 56 9	3096	47 27 54	3096	45 59 39	3094						
	SUN E.	111 46 32	3434	110 24 54	3431	109 3 13	3430	107 41 31	3427						
29	Saturn W.	75 26 47	3018	76 56 37	3013	78 26 33	3007	79 56 37	3001						
	Jupiter W.	67 49 18	2999	69 19 32	2993	70 49 53	2988	72 20 21	2981						
	α Aquilæ W.	59 15 56	3824	60 30 33	3796	61 45 39	3769	63 1 14	3744						
	α Arietis E.	38 37 56	3085	37 9 28	3083	35 40 57	3081	34 12 24	3078						
	SUN E.	100 51 58	3406	99 29 48	3400	98 7 31	3394	96 45 7	3386						
30	Saturn W.	87 29 3	2963	89 0 2	2954	90 31 12	2945	92 2 34	2935						
	Jupiter W.	79 54 50	2944	81 26 13	2935	82 57 47	2925	84 29 34	2916						
	α Aquilæ W.	69 25 30	3629	70 43 33	3609	72 1 58	3588	73 20 45	3569						
	α Arietis E.	26 48 57	3070	25 20 11	3071	23 51 26	3073	22 22 43	3078						
	SUN E.	89 50 59	3345	88 27 40	3336	87 4 10	3325	85 40 27	3315						

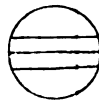
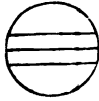
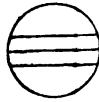
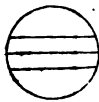
CONFIGURATIONS OF THE SATELLITES OF JUPITER.

At 13^h, MEAN TIME.

Day of the Month.	West.			East.		
1	4.		1.	○	.2 ³	
2	4.			○	.1 2.	.3
3	.4		2. .1	○		3.
4	.4		.2	○ 3.	1.	
5	.4	3.	.1	○		.2
6		.3 .4		○ 1.		
7	.1 ●		.2 ³	○		● .4
8			1.	○	.2 ³	.4
9				○	.1 2.	.3 .4
10			.1	○		3. .4
11			.2	○	3. 1.	
12		3. .1		○	.2	4.
13		.3		○	.2 ¹	4.
14		.3 .2	.1	○		4.
15				○	.2 ³	○ 1.
16		4.		○	.1 2.	.3
17	4.		.1	○		3.
18	4.		.2	○	3. ¹	
19	4.		3. .1	○		.2
20	.4	3.		○	.1	.2
21	.4	.3	.1	○		
22	.2 ●	.4		○		● .3 ○ 1.
23			.4	○	.1 2.	.3
24			.1	○	.4	3.
25			.2	○	.3	.4
26			.2 ¹	○	.2	.4
27		3.		○	.1	.4
28		.3 2.	.1	○		4.
29				○	.2 ³ 1.	4.
30	.1 ●			○	2. 3	4.

This Table represents, at 13^h after Mean Noon of each day of the month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page; the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as towards the disc of Jupiter. When a Satellite is at its greatest elongation, the point is placed above or below the disc of Jupiter. A white circle (○) at the left or right hand of the page, denotes that the Satellite is on the side of it is on the disc of Jupiter, and a black circle (●) that it is either above or below the disc of Jupiter.

ECLIPSES OF THE SATELLITES OF JUPITER.

SATELLITE.	Day of the Month.	Mean Time.	Sidereal Time.	PHASE as seen in an inverting Telescope.
I.	2	h m s 4 4 1.8	h m s 8 46 52.4	Im.
	3	22 32 36.6	3 22 25.9	Im.
	5	17 1 6.3	21 57 54.2	Im.
	7†	11 29 41.5	16 33 28.1	Im.
	9	5 58 9.8	11 8 55.1	Im.
	11	0 26 46.3	5 44 30.2	Im.
	12	18 55 17.6	0 20 0.2	Im.
	14*	13 23 54.6	18 55 35.9	Im.
	16	7 52 24.6	13 31 4.6	Im.
	18	2 21 2.8	8 6 41.5	Im.
	19	20 49 35.9	2 42 13.2	Im.
	21†	15 18 14.8	21 17 50.8	Im.
	23†	9 46 46.5	15 53 21.2	Im.
	25	4 15 26.7	10 29 0.0	Im.
	26	22 44 1.4	5 4 33.4	Im.
28	17 12 42.5	23 40 13.2	Im.	
30*	11 41 16.1	18 18 45.4	Im.	
				i * 
II.	1	3 47 33.0	8 26 24.4	Im.
	4	17 4 24.4	21 57 16.4	Im.
	8	6 21 18.5	11 28 11.0	Im.
	11	19 38 11.8	0 59 4.9	Im.
	15	8 55 8.1	14 30 1.8	Im.
	18	22 12 4.1	4 0 58.4	Im.
	22*	11 29 2.4	17 31 57.3	Im.
	26	0 46 1.9	7 2 57.4	Im.
	29*	14 3 2.9	20 33 59.0	Im.
				i * 
III.	0	21 35 22.4	2 13 12.6	Im.
	1	0 48 9.1	5 26 31.0	Em.
	8	1 34 8.1	6 40 13.5	Im.
	15	5 32 55.0	11 7 15.5	Im.
	22†	9 31 56.6	15 34 32.2	Im.
	29*	13 31 13.5	20 2 4.4	Im.
				i * 
IV.	7	3 52 49.4	8 55 21.0	Im.
	7	6 54 2.7	11 57 4.1	Em.
	23	21 52 41.9	4 1 15.9	Im.
	24	1 3 1.4	7 12 6.6	Em.
				i e * * 

APPROXIMATE SIDEREAL TIMES
OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER,
AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.			TRANSITS OF SATELLITES.			TRANSITS OF SHADOWS.		
	Immersion.	Emersion.		Ingress.	Egress.		Ingress.	Egress.	
	d h m	d h m		d h m	d h m		d h m	d h m	
I.		2 11 55		1 12 22	1 14 41		1 11 30	1 13 48	
		4 6 29		3 6 55	3 9 15		3 6 5	3 8 24	
		5 1 2		4 1 29	4 3 48		4 0 41	4 2 59	
		7* 19 36		6† 20 2	6 22 21		6* 19 16	6 21 34	
		9 14 9		8 14 35	8* 16 55		8 13 51	8† 16 10	
	In	11 8 43		10 9 9	10 11 28		10 8 27	10 10 45	
		12 3 16		11 3 42	12 6 1		11 3 2	11 5 21	
		14 21 49		13 22 15	13 0 34		13 21 37	13 23 56	
	the	16† 16 22		15* 16 48	15* 19 7		15† 16 13	15* 18 31	
		18 10 56		17 11 21	17 13 40		17 10 48	17 13 7	
		19 5 29		19 5 54	19 8 13		18 5 24	19 7 42	
	Shadow.	21 0 2		20 0 27	20 2 46		20 23 59	20 2 18	
		23* 18 35		22* 19 0	22† 21 19		22* 18 34	22† 20 53	
		25 13 8		24 13 33	24† 15 52		24 13 10	24† 15 29	
		27 7 41		26 8 6	26 10 25		26 7 45	26 10 4	
	28 2 14		27 2 39	27 4 58		27 2 21	27 4 40		
	30* 20 47		29† 21 12	29 23 31		29* 20 56	29 23 15		
II.		1 13 1		2 4 38	3 7 32		2 2 59	3 5 51	
		4 2 24		6* 18 1	6 20 55		6† 16 30	6* 19 23	
	In	8† 15 46		10 7 26	10 10 20		10 6 3	10 8 56	
		11 5 9		13† 20 49	13 23 43		13* 19 35	13 22 28	
	the	15* 18 30		17 10 13	17 13 7		17 9 8	17 12 1	
		19 7 52		20 23 35	20 2 29		20 22 40	20 1 33	
	Shadow.	22† 21 13		24 12 58	24† 15 53		24 12 13	24 15 6	
	26 10 34		27 2 20	27 5 14		27 1 45	27 4 38		
	29 23 55								
III.	1 5 40	1 9 7		4† 19 48	4 23 15		4† 16 33	4† 19 56	
		8 13 2		11 23 41	11 3 9		11† 21 0	11 0 24	
	In the	15* 16 53		18 3 30	19 6 58		18 1 27	18 4 52	
	Shadow.	22† 20 41		26 7 17	26 10 45		25 5 55	26 9 20	
	29 0 27								
IV.	7† 15 45	7* 19 19					13* 19 32	13 22 47	
	24 7 29	24 11 3							

Day of the Month.	For correcting the Places of the Fixed Stars.				Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0 ^s .567309.	From Mean Noon of January 1.		
	At Mean Midnight,						Days.	Day of the Year.	Fraction of the Year.
	Logarithm of								
	A	B	C	D					
1	-0.7840	-1.2844	+9.8531	-0.5091	^h 19 ^m 18 ^s 35.68	70	151	.413	
2	0.7624	1.2869	9.8553	0.5066	19 14 39.77	71	152	.416	
3	0.7395	1.2892	9.8574	0.5041	19 10 43.86	72	153	.419	
4	-0.7151	-1.2913	+9.8596	-0.5017	19 6 47.95	73	154	.422	
5	0.6892	1.2934	9.8617	0.4993	19 2 52.03	74	155	.424	
6	0.6616	1.2953	9.8638	0.4970	18 58 56.12	75	156	.427	
7	-0.6319	-1.2970	+9.8660	-0.4948	18 55 0.21	76	157	.430	
8	0.5999	1.2987	9.8681	0.4926	18 51 4.30	77	158	.433	
9	0.5653	1.3002	9.8702	0.4905	18 47 8.39	78	159	.435	
10	-0.5276	-1.3016	+9.8724	-0.4885	18 43 12.47	79	160	.438	
11	0.4861	1.3029	9.8745	0.4865	18 39 16.56	80	161	.441	
12	0.4401	1.3040	9.8766	0.4846	18 35 20.65	81	162	.444	
13	-0.3886	-1.3050	+9.8787	-0.4828	18 31 24.74	82	163	.446	
14	0.3300	1.3059	9.8808	0.4810	18 27 28.82	83	164	.449	
15	0.2621	1.3067	9.8829	0.4794	18 23 32.91	84	165	.452	
16	-0.1815	-1.3073	+9.8850	-0.4778	18 19 37.00	85	166	.454	
17	0.0823	1.3079	9.8871	0.4763	18 15 41.09	86	167	.457	
18	9.9533	1.3083	9.8891	0.4748	18 11 45.18	87	168	.460	
19	-9.7690	-1.3086	+9.8912	-0.4735	18 7 49.26	88	169	.463	
20	-9.4420	1.3087	9.8933	0.4722	18 3 53.35	89	170	.465	
21	+8.5326	1.3088	9.8953	0.4710	17 59 57.44	90	171	.468	
22	+9.5376	-1.3087	+9.8973	-0.4699	17 56 1.53	91	172	.471	
23	9.8166	1.3085	9.8994	0.4689	17 52 5.61	92	173	.474	
24	9.9849	1.3082	9.9014	0.4680	17 48 9.70	93	174	.476	
25	+0.1059	-1.3078	+9.9034	-0.4672	17 44 13.79	94	175	.479	
26	0.2002	1.3072	9.9054	0.4664	17 40 17.88	95	176	.482	
27	0.2776	1.3065	9.9074	0.4657	17 36 21.97	96	177	.485	
28	+0.3432	-1.3057	+9.9093	-0.4652	17 32 26.05	97	178	.487	
29	0.4001	1.3048	9.9113	0.4647	17 28 30.14	98	179	.490	
30	0.4502	1.3038	9.9132	0.4643	17 24 34.23	99	180	.493	
31	+0.4951	-1.3026	+9.9152	-0.4639	17 20 38.31	100	181	.496	

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, to be added to Apparent Time.	Diff. for 1 hour.	
		Apparent Right Ascension.	Diff. for 1 hour.	Apparent Declination.	Diff. for 1 hour.				
		h m s	"	° ' "	"	m s	m s	"	
Frid.	1	6 39 53	34	10° 340	N. 23 8 38	10° 37	1 8 71	3 22 05	0° 482
Sat.	2	6 44 1	49	10° 330	23 4 29	11° 38	1 8 67	3 33 62	0° 471
Sun.	3	6 48 9	40	10° 318	22 59 56	12° 38	1 8 63	3 44 93	0° 460
Mon.	4	6 52 17	03	10° 306	22 54 59	13° 38	1 8 59	3 55 97	0° 448
Tues.	5	6 56 24	37	10° 293	22 49 37	14° 38	1 8 54	4 6 72	0° 435
Wed.	6	7 0 31	39	10° 278	22 43 52	15° 37	1 8 49	4 17 15	0° 421
Thur.	7	7 4 38	06	10° 263	22 37 44	16° 35	1 8 44	4 27 25	0° 405
Frid.	8	7 8 44	37	10° 247	22 31 11	17° 33	1 8 39	4 36 97	0° 389
Sat.	9	7 12 50	29	10° 230	22 24 15	18° 29	1 8 33	4 46 31	0° 372
Sun.	10	7 16 55	80	10° 212	22 16 56	19° 25	1 8 27	4 55 23	0° 354
Mon.	11	7 21 0	88	10° 193	22 9 14	20° 20	1 8 22	5 3 73	0° 335
Tues.	12	7 25 5	50	10° 173	22 1 10	21° 14	1 8 16	5 11 78	0° 315
Wed.	13	7 29 9	65	10° 153	21 52 42	22° 08	1 8 10	5 19 35	0° 295
Thur.	14	7 33 13	32	10° 132	21 43 52	23° 00	1 8 03	5 26 44	0° 274
Frid.	15	7 37 16	48	10° 111	21 34 40	23° 32	1 7 96	5 33 02	0° 253
Sat.	16	7 41 19	13	10° 088	21 25 6	24° 33	1 7 89	5 39 09	0° 231
Sun.	17	7 45 21	24	10° 065	21 15 10	25° 73	1 7 82	5 44 63	0° 208
Mon.	18	7 49 22	81	10° 042	21 4 53	26° 62	1 7 75	5 49 63	0° 186
Tues.	19	7 53 23	84	10° 019	20 54 14	27° 49	1 7 68	5 54 09	0° 163
Wed.	20	7 57 24	31	9° 996	20 43 14	28° 36	1 7 60	5 58 00	0° 139
Thur.	21	8 1 24	22	9° 973	20 31 54	29° 23	1 7 52	6 1 34	0° 116
Frid.	22	8 5 23	57	9° 949	20 20 12	30° 08	1 7 44	6 4 12	0° 093
Sat.	23	8 9 22	34	9° 925	20 8 10	30° 32	1 7 36	6 6 34	0° 068
Sun.	24	8 13 20	54	9° 901	19 55 48	31° 75	1 7 28	6 7 98	0° 044
Mon.	25	8 17 18	17	9° 877	19 43 6	32° 58	1 7 20	6 9 04	0° 020
Tues.	26	8 21 15	22	9° 853	19 30 4	33° 39	1 7 12	6 9 53	0° 004
Wed.	27	8 25 11	69	9° 829	19 16 43	34° 19	1 7 03	6 9 44	0° 028
Thur.	28	8 29 7	58	9° 804	19 3 2	34° 38	1 6 94	6 8 77	0° 052
Frid.	29	8 33 2	88	9° 780	18 49 3	35° 1	1 6 86	6 7 53	0° 076
Sat.	30	8 36 57	60	9° 756	18 34 45	35° 3	1 6 77	6 7 0	0° 100
Sun.	31	8 40 51	74	9° 731	18 20 8	35° 1	1 6 69	6 5 29	0° 125
Mon.	32	8 44 45	29		N. 18 5				

* Mean Time of the Semidiameter passing may be

Time.

AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S			Equation of Time, to be subtracted from Mean Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semidiam.*		
Frid.	1	h m s 6 39 52·76	N. 23 8 38·7	15 45·1	3 32·02	h m s 6 36 30·74
Sat.	2	6 44 0·88	23 4 30·0	15 45·1	3 33·59	6 40 27·29
Sun.	3	6 48 8·75	22 59 57·0	15 45·1	3 44·90	6 44 23·85
Mon.	4	6 52 16·25	22 54 59·9	15 45·1	3 55·94	6 48 20·41
Tues.	5	6 56 23·66	22 49 38·8	15 45·1	4 6·69	6 52 16·97
Wed.	6	7 0 30·65	22 43 53·9	15 45·1	4 17·12	6 56 13·53
Thur.	7	7 4 37·30	22 37 45·2	15 45·1	4 27·22	7 0 10·08
Frid.	8	7 8 43·58	22 31 13·0	15 45·1	4 36·94	7 4 6·64
Sat.	9	7 12 49·48	22 24 17·3	15 45·1	4 46·28	7 8 3·20
Sun.	10	7 16 54·96	22 16 58·5	15 45·2	4 55·20	7 11 59·76
Mon.	11	7 21 0·92	22 9 16·6	15 45·2	5 3·70	7 15 56·32
Tues.	12	7 25 4·62	22 1 11·9	15 45·3	5 11·75	7 19 52·87
Wed.	13	7 29 8·75	21 52 44·6	15 45·3	5 19·32	7 23 49·43
Thur.	14	7 33 12·40	21 43 54·9	15 45·4	5 26·41	7 27 45·99
Frid.	15	7 37 15·54	21 34 42·9	15 45·4	5 32·99	7 31 42·55
Sat.	16	7 41 18·18	21 25 9·0	15 45·5	5 39·07	7 35 39·11
Sun.	17	7 45 20·27	21 15 13·2	15 45·6	5 44·61	7 39 35·66
Mon.	18	7 49 21·83	21 4 55·9	15 45·6	5 49·61	7 43 32·22
Tues.	19	7 53 22·85	20 54 17·3	15 45·7	5 54·07	7 47 28·78
Wed.	20	7 57 23·31	20 43 17·6	15 45·8	5 57·98	7 51 25·33
Thur.	21	8 1 23·22	20 31 56·9	15 45·9	6 1·33	7 55 21·89
Frid.	22	8 5 22·56	20 20 15·5	15 46·0	6 4·11	7 59 18·45
Sat.	23	8 9 21·33	20 8 13·8	15 46·1	6 6·33	8 3 15·00
Sun.	24	8 13 19·53	19 55 51·8	15 46·1	6 7·97	8 7 11·56
Mon.	25	8 17 17·16	19 43 9·8	15 46·2	6 9·04	8 11 8·12
Tues.	26	8 21 14·21	19 30 8·1	15 46·3	6 9·53	8 15 4·68
Wed.	27	8 25 10·67	19 16 46·9	15 46·4	6 9·44	8 19 1·23
Thur.	28	8 29 6·57	19 3 6·5	15 46·5	6 8·78	8 22 57·79
Frid.	29	8 33 1·88	18 49 7·1	15 46·6	6 7·53	8 26 54·35
Sat.	30	8 36 56·61	18 34 48·9	15 46·8	6 5·71	8 30 50·90
Sun.	31	8 40 50·76	18 20 12·4	15 46·9	6 3·30	8 34 47·46
		8 44 44·32	N. 18 5 17·7	15 47·0	6 0·31	8 38 44·01

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S			
	Longitude.	Latitude.		Semidiameter.		Horizontal Parallax.	
	<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>
1	99° 9' 36".8	N.0° 64'	0.0072272	14° 58' 5"	15° 3' 0"	54° 57' 1"	55° 13' 7"
2	100 6 49.0	0° 62'	0.0072309	15 8.1	15 13.7	55 32.4	55 53.2
3	101 4 1.4	0° 58'	0.0072324	15 20.0	15 26.5	56 16.0	56 40.1
4	102 1 14.2	0° 51'	0.0072317	15 33.4	15 40.5	57 5.4	57 31.4
5	102 58 27.2	0° 41'	0.0072285	15 47.6	15 54.5	57 57.3	58 22.9
6	103 55 40.4	0° 29'	0.0072226	16 1.2	16 7.5	58 47.4	59 10.4
7	104 52 53.8	0° 17'	0.0072140	16 13.2	16 18.1	59 31.3	59 49.5
8	105 50 7.5	N.0° 02'	0.0072029	16 22.3	16 25.4	60 4.7	60 16.2
9	106 47 21.4	S.0° 11'	0.0071891	16 27.6	16 28.7	60 24.2	60 28.3
10	107 44 35.3	0° 24'	0.0071727	16 28.8	16 27.9	60 28.7	60 25.3
11	108 41 49.4	0° 36'	0.0071538	16 26.1	16 23.5	60 18.7	60 9.0
12	109 39 3.5	0° 46'	0.0071324	16 20.1	16 16.1	59 56.7	59 42.1
13	110 36 17.7	0° 53'	0.0071085	16 11.7	16 6.9	59 25.9	59 8.4
14	111 33 32.0	0° 58'	0.0070824	16 1.9	15 56.8	58 50.0	58 31.1
15	112 30 46.4	0° 59'	0.0070542	15 51.6	15 46.4	58 12.0	57 52.9
16	113 28 1.0	0° 57'	0.0070240	15 41.2	15 36.2	57 34.1	57 15.6
17	114 25 15.6	0° 53'	0.0069919	15 31.3	15 26.6	56 57.7	56 40.5
18	115 22 30.5	0° 46'	0.0069580	15 22.1	15 17.7	56 23.8	56 7.6
19	116 19 45.6	0° 36'	0.0069226	15 13.5	15 9.5	55 52.2	55 37.6
20	117 17 1.1	0° 25'	0.0068857	15 5.7	15 2.2	55 23.8	55 10.8
21	118 14 17.1	S.0° 12'	0.0068474	14 58.8	14 55.8	54 58.5	54 47.3
22	119 11 33.6	0° 00'	0.0068077	14 53.0	14 50.5	54 37.2	54 28.0
23	120 8 50.6	N.0° 13'	0.0067667	14 48.4	14 46.6	54 20.2	54 13.7
24	121 6 8.4	0° 24'	0.0067243	14 45.1	14 44.1	54 8.2	54 4.3
25	122 3 27.1	0° 34'	0.0066806	14 43.4	14 43.3	54 1.9	54 1.4
26	123 0 46.6	0° 42'	0.0066354	14 43.6	14 44.5	54 2.7	54 5.7
27	123 58 7.0	0° 47'	0.0065888	14 45.8	14 47.8	54 10.7	54 18.0
28	124 55 28.5	0° 49'	0.0065407	14 50.0	14 53.6	54 27.5	54 39.2
29	125 52 51.1	0° 49'	0.0064919	14 57.0	15 1.8	54 53.1	55 9.5
30	126 50 14.8	0° 45'	0.0064424	15 0.0	15 2.6	55 28.1	55 49.0
31	127 47 39.7	0° 38'	0.0063924	15 18.0	15 10.0	56 11.9	56 36.8
32	128 45 5.8	N.0° 28'	0.0063419	15 27.0	15 18.0	57 3.0	57 23.0

MEAN TIME.

		THE MOON'S							
Day of the Week.	Day of the Month.	Longitude.		Latitude.		Age.	Meridian		
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Passage.		
		^o ['] ["]	^o ['] ["]	^o ['] ["]	^o ['] ["]	^d	^h ^m		
Frid.	1	14 54 31.2	21 2 31.5	N.5 14 57.7	N.5 16 39.6	22.6	18 43.2		
Sat.	2	27 14 36.8	33 31 15.8	5 14 42.4	5 8 59.6	23.6	19 29.9		
Sun.	3	39 52 55.7	46 19 58.9	4 59 26.1	4 45 59.4	24.6	20 20.8		
Mon.	4	52 52 43.7	59 31 22.8	4 28 38.5	4 7 26.7	25.6	21 16.2		
Tues.	5	66 16 1.4	73 6 39.3	3 42 31.0	3 14 2.6	26.6	22 15.4		
Wed.	6	80 3 7.1	87 5 8.0	2 42 18.9	2 7 41.8	27.6	23 16.6		
Thur.	7	94 12 17.6	101 24 3.1	1 30 40.4	N.0 51 48.0	28.6	♄		
Frid.	8	108 39 46.1	115 58 40.7	N.0 11 43.4	S.0 28 50.5	0.2	0 17.6		
Sat.	9	123 19 59.1	130 42 47.7	S.1 9 9.0	1 48 26.6	1.2	1 16.3		
Sun.	10	138 6 14.7	145 29 25.8	2 25 58.4	3 1 1.4	2.2	2 11.9		
Mon.	11	152 51 33.3	160 11 49.9	3 32 58.3	4 1 16.0	3.2	3 4.5		
Tues.	12	167 29 35.9	174 44 15.1	4 25 28.5	4 45 14.9	4.2	3 55.1		
Wed.	13	181 55 19.6	189 2 26.2	5 0 21.7	5 10 42.2	5.2	4 44.7		
Thur.	14	196 5 19.6	203 3 48.5	5 16 14.8	5 17 2.8	6.2	5 34.5		
Frid.	15	209 57 48.1	216 47 16.9	5 13 15.2	5 5 2.8	7.2	6 25.4		
Sat.	16	223 32 17.7	230 12 56.3	4 52 42.2	4 36 30.2	8.2	7 18.0		
Sun.	17	236 49 20.6	243 21 40.2	4 16 47.5	3 53 54.7	9.2	8 12.1		
Mon.	18	249 50 5.8	256 14 49.0	3 28 15.0	3 0 12.2	10.2	9 7.0		
Tues.	19	262 36 1.7	268 53 56.2	2 30 10.2	1 58 33.5	11.2	10 1.4		
Wed.	20	275 8 43.8	281 20 37.0	1 25 47.2	S.0 52 15.0	12.2	10 54.0		
Thur.	21	287 29 47.0	293 36 26.6	S.0 18 21.1	N.0 15 31.3	13.2	11 43.8		
Frid.	22	299 40 47.9	305 43 3.7	N.0 48 59.3	1 21 42.4	14.2	12 30.6		
Sat.	23	311 43 27.6	317 42 14.0	1 53 19.3	2 23 32.5	15.2	13 14.5		
Sun.	24	323 39 38.6	329 35 58.7	2 52 3.8	3 18 37.1	16.2	13 56.2		
Mon.	25	335 31 32.0	341 26 40.0	3 42 57.5	4 4 52.4	17.2	14 36.4		
Tues.	26	347 21 44.1	353 17 7.6	4 24 9.1	4 40 37.1	18.2	15 16.3		
Wed.	27	359 13 15.8	5 10 35.9	4 54 6.4	5 4 28.5	19.2	15 56.4		
Thur.	28	11 9 36.4	17 10 47.4	5 11 35.4	5 15 19.5	20.2	16 38.3		
Frid.	29	23 14 39.7	29 21 45.4	5 15 35.6	5 12 17.7	21.2	17 22.6		
Sat.	30	35 32 35.8	41 47 43.3	5 5 22.0	4 54 45.9	22.2	18 10.4		
Sun.	31	48 7 38.1	54 32 49.6	4 40 27.8	4 22 28.7	23.2	19 2.3		
Mon.	32	61 3 44.2	67 40 44.5	N.4 0 51.7	N.3 35 43.2	24.2	19 58.6		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
FRIDAY 1.				SUNDAY 3.			
0	0 46 38.64	N.10 42 54.3	121.47	0	2 23 11.98	N.19 31 6.5	98.98
1	0 48 32.11	10 55 3.1	121.13	1	2 25 21.59	19 40 30.0	98.98
2	0 50 25.83	11 7 9.9	120.78	2	2 27 31.61	19 49 48.5	98.78
3	0 52 19.80	11 19 14.6	120.42	3	2 29 42.04	19 59 1.6	91.32
4	0 54 14.03	11 31 17.1	120.07	4	2 31 52.89	20 8 9.5	90.48
5	0 56 8.51	11 43 17.5	119.68	5	2 34 4.16	20 17 12.0	89.52
6	0 58 3.26	11 55 15.6	119.30	6	2 36 15.84	20 26 9.1	88.38
7	0 59 58.27	12 7 11.4	118.92	7	2 38 27.95	20 35 0.6	87.64
8	1 1 53.56	12 19 4.9	118.52	8	2 40 40.47	20 43 46.5	86.68
9	1 3 49.12	12 30 56.0	118.10	9	2 42 53.42	20 52 26.6	85.73
10	1 5 44.97	12 42 44.6	117.68	10	2 45 6.79	21 1 1.0	84.75
11	1 7 41.09	12 54 30.7	117.27	11	2 47 20.58	21 9 29.5	83.77
12	1 9 37.51	13 6 14.3	116.82	12	2 49 34.80	21 17 52.1	82.78
13	1 11 34.22	13 17 55.2	116.37	13	2 51 49.45	21 26 8.6	81.73
14	1 13 31.22	13 29 33.4	115.92	14	2 54 4.52	21 34 19.0	80.70
15	1 15 28.52	13 41 8.9	115.45	15	2 56 20.02	21 42 23.2	79.64
16	1 17 26.13	13 52 41.6	114.97	16	2 58 35.95	21 50 21.1	78.60
17	1 19 24.05	14 4 11.4	114.48	17	3 0 52.31	21 58 12.7	77.52
18	1 21 22.28	14 15 38.3	113.98	18	3 3 9.10	22 5 57.8	76.42
19	1 23 20.82	14 27 2.2	113.47	19	3 5 26.31	22 13 36.3	75.32
20	1 25 19.68	14 38 23.0	112.97	20	3 7 43.95	22 21 8.2	74.20
21	1 27 18.87	14 49 40.8	112.48	21	3 10 2.01	22 28 33.4	73.08
22	1 29 18.38	15 0 55.4	111.98	22	3 12 20.51	22 35 51.9	71.92
23	1 31 18.22	N.15 12 6.7	111.48	23	3 14 39.42	N.22 43 3.4	70.77
SATURDAY 2.				MONDAY 4.			
0	1 33 18.40	N.15 23 14.8	110.78	0	3 16 58.76	N.22 50 8.0	69.60
1	1 35 18.92	15 34 19.5	110.22	1	3 19 18.53	22 57 5.6	68.40
2	1 37 19.78	15 45 20.8	109.63	2	3 21 38.72	23 3 56.0	67.20
3	1 39 20.98	15 56 18.6	109.06	3	3 23 59.33	23 10 39.2	66.00
4	1 41 22.53	16 7 12.9	108.45	4	3 26 20.37	23 17 15.1	64.75
5	1 43 24.44	16 18 3.6	107.82	5	3 28 41.82	23 23 43.6	63.52
6	1 45 26.71	16 28 50.5	107.22	6	3 31 3.69	23 30 4.7	62.28
7	1 47 29.33	16 39 33.8	106.57	7	3 33 25.97	23 36 18.2	60.97
8	1 49 32.32	16 50 13.2	105.92	8	3 35 48.66	23 42 24.0	59.70
9	1 51 35.67	17 0 48.7	105.25	9	3 38 11.76	23 48 22.2	58.38
10	1 53 39.39	17 11 20.2	104.60	10	3 40 35.27	23 54 12.5	57.07
11	1 55 43.49	17 21 47.8	103.90	11	3 42 59.18	23 59 54.9	55.78
12	1 57 47.95	17 32 11.2	103.22	12	3 45 23.50	24 5 29.4	54.40
13	1 59 52.80	17 42 30.5	102.50	13	3 47 48.22	24 10 55.8	53.05
14	2 1 58.04	17 52 45.5	101.78	14	3 50 13.33	24 16 14.1	51.60
15	2 4 3.66	18 2 56.2	101.05	15	3 52 38.83	24 21 24.2	50.20
16	2 6 9.66	18 13 2.5	100.32	16	3 55 4.72	24 26 26.0	48.90
17	2 8 16.06	18 23 4.4	99.57	17	3 57 31.00	24 31 19.4	47.48
18	2 10 22.85	18 33 1.8	98.78	18	3 59 57.66	24 36 4.3	46.07
19	2 12 30.04	18 42 54.5	98.02	19	4 2 24.69	24 40 40.7	44.68
20	2 14 37.62	18 52 42.6	97.22	20	4 4 52.10	24 45 8.5	43.18
21	2 16 45.61	19 2 25.9	96.40	21	4 7 19.57	24 50 97.6	41.72
22	2 18 54.00	19 12 4.3	95.60	22	4 9 48		
23	2 21 2.79	19 21 37.9	94.77	23	4 12 16		
24	2 23 11.98	N.19 31 6.5		24	4 14		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
TUESDAY 5.				THURSDAY 7.			
0	4 14 45 ³⁶	N.25 1 32 ⁰	37 ³⁷	0	6 18 32 ⁴⁶	N.24 54 15 ⁰	44 ⁰⁸
1	4 17 14 ⁵⁷	25 5 15 ⁶	35 ⁷⁶	1	6 21 9 ⁷⁸	24 49 50 ⁵	45 ³⁵
2	4 19 44 ¹¹	25 8 50 ¹	34 ³³	2	6 23 46 ⁹³	24 45 15 ⁴	47 ⁶⁰
3	4 22 14 ⁰⁰	25 12 15 ⁵	32 ⁶⁸	3	6 26 24 ¹⁰	24 40 29 ⁸	49 ³³
4	4 24 44 ²²	25 15 31 ⁶	31 ¹⁵	4	6 29 1 ²⁰	24 35 33 ⁸	51 ¹⁰
5	4 27 14 ⁷⁷	25 18 38 ⁵	29 ⁶⁰	5	6 31 38 ²³	24 30 27 ²	52 ³²
6	4 29 45 ⁶³	25 21 36 ¹	28 ⁰²	6	6 34 15 ¹⁸	24 25 16 ³	54 ⁵⁵
7	4 32 16 ⁸¹	25 24 24 ²	26 ⁴³	7	6 36 52 ⁰⁵	24 19 43 ⁰	56 ²⁸
8	4 34 48 ³⁰	25 27 2 ⁸	24 ⁸⁷	8	6 39 28 ⁸³	24 14 5 ³	58 ⁰⁰
9	4 37 20 ⁰⁹	25 29 32 ⁰	23 ²⁵	9	6 42 5 ⁵⁰	24 8 17 ³	59 ⁷²
10	4 39 52 ¹⁸	25 31 51 ⁵	21 ⁶⁵	10	6 44 42 ⁰⁶	24 2 19 ⁰	61 ⁴⁵
11	4 42 24 ⁵⁵	25 34 1 ⁴	20 ⁰²	11	6 47 18 ⁵⁰	23 56 10 ⁴	63 ¹²
12	4 44 57 ²⁰	25 36 1 ⁵	18 ⁴⁰	12	6 49 54 ⁸²	23 49 51 ⁷	64 ³⁸
13	4 47 30 ¹³	25 37 51 ⁹	16 ⁷⁵	13	6 52 31 ⁰¹	23 43 22 ⁸	66 ⁵⁰
14	4 50 3 ³³	25 39 32 ⁴	15 ¹⁰	14	6 55 7 ⁰⁵	23 36 42 ⁸	68 ¹⁷
15	4 52 36 ⁷⁹	25 41 3 ⁰	12 ⁴⁵	15	6 57 42 ⁹⁵	23 29 54 ⁸	69 ³⁵
16	4 55 10 ⁵⁰	25 42 23 ⁷	11 ⁷⁸	16	7 0 18 ⁶⁹	23 22 55 ⁷	71 ⁴⁸
17	4 57 44 ⁴⁵	25 43 34 ⁴	10 ¹²	17	7 2 54 ²⁷	23 15 46 ⁸	73 ¹⁵
18	5 0 18 ⁶⁵	25 44 35 ¹	8 ⁴²	18	7 5 29 ⁶⁷	23 8 27 ⁹	74 ⁷⁸
19	5 2 53 ⁰⁷	25 45 25 ⁶	6 ⁷²	19	7 8 4 ⁹¹	23 0 59 ²	76 ⁴⁰
20	5 5 27 ⁷¹	25 46 6 ⁰	5 ⁰²	20	7 10 39 ⁹⁶	22 53 20 ⁸	78 ⁰²
21	5 8 2 ⁵⁶	25 46 36 ²	3 ³³	21	7 13 14 ⁸²	22 45 32 ⁷	79 ⁶⁸
22	5 10 37 ⁶²	25 46 56 ²	1 ⁶²	22	7 15 49 ⁴⁸	22 37 34 ⁹	81 ²³
23	5 13 12 ⁸⁸	N.25 47 5 ⁹	0 ¹⁰	23	7 18 23 ⁹⁵	N.22 29 27 ⁵	82 ⁰⁰
WEDNESDAY 6.				FRIDAY 8.			
0	5 15 48 ³¹	N.25 47 5 ³	1 ²⁸	0	7 20 58 ²¹	N.22 21 10 ⁷	84 ³⁸
1	5 18 23 ⁹⁴	25 46 54 ³	3 ⁵⁵	1	7 23 32 ²⁵	22 12 44 ⁴	85 ³³
2	5 20 59 ⁷⁴	25 46 33 ⁰	5 ³⁰	2	7 26 6 ⁰⁷	22 4 8 ⁸	87 ⁴⁸
3	5 23 35 ⁷⁰	25 46 1 ²	7 ⁰³	3	7 28 39 ⁶⁷	21 55 23 ⁹	89 ⁰²
4	5 26 11 ⁸¹	25 45 19 ⁰	8 ⁷⁸	4	7 31 13 ⁰⁴	21 46 29 ⁸	90 ⁵⁵
5	5 28 48 ⁰⁷	25 44 26 ³	10 ⁵²	5	7 33 46 ¹⁸	21 37 26 ⁵	92 ⁰⁵
6	5 31 24 ⁴⁶	25 43 23 ¹	12 ²²	6	7 36 19 ⁰⁷	21 28 14 ²	93 ³³
7	5 34 0 ⁹⁷	25 42 9 ⁴	14 ⁰³	7	7 38 51 ⁷²	21 18 52 ⁰	95 ⁰³
8	5 36 37 ⁶¹	25 40 45 ²	15 ³²	8	7 41 24 ¹³	21 9 22 ⁸	96 ⁴⁸
9	5 39 14 ³⁵	25 39 10 ³	17 ⁵⁵	9	7 43 56 ²⁸	20 59 43 ⁹	97 ³⁵
10	5 41 51 ¹⁹	25 37 25 ⁰	19 ³²	10	7 46 28 ¹⁸	20 49 56 ²	99 ²⁸
11	5 44 28 ¹²	25 35 29 ⁰	21 ¹⁰	11	7 48 59 ⁸²	20 39 59 ⁹	100 ³⁰
12	5 47 5 ¹⁴	25 33 22 ⁴	22 ³⁷	12	7 51 31 ¹⁸	20 29 55 ¹	102 ²²
13	5 49 42 ²⁴	25 31 5 ²	24 ⁶²	13	7 54 2 ²⁹	20 19 41 ⁸	103 ⁶⁰
14	5 52 19 ³⁹	25 28 37 ⁴	26 ⁴⁰	14	7 56 33 ¹²	20 9 28 ²	105 ⁰⁰
15	5 54 56 ⁶¹	25 25 59 ⁰	28 ¹⁸	15	7 59 3 ⁶⁸	19 58 50 ²	106 ³⁵
16	5 57 33 ⁸⁶	25 23 9 ²	29 ⁵⁵	16	8 1 33 ⁹⁶	19 48 12 ¹	107 ⁶⁸
17	6 0 11 ¹⁶	25 20 10 ²	31 ⁷²	17	8 4 3 ⁹⁶	19 37 26 ⁰	109 ⁰²
18	6 2 48 ⁴⁸	25 16 59 ⁹	33 ⁵⁰	18	8 6 33 ⁶⁸	19 26 31 ⁸	110 ³²
19	6 5 25 ⁸²	25 13 38 ⁹	35 ²⁷	19	8 9 3 ¹¹	19 15 29 ⁸	111 ⁶⁵
20	6 8 3 ¹⁶	25 10 7 ³	37 ⁰²	20	8 11 32 ²⁵	19 4 19 ⁹	112 ³⁸
21	6 10 40 ⁵¹	25 6 23 ¹	38 ³⁰	21	8 14 1 ¹¹	18 53 2 ⁴	114 ¹²
22	6 13 17 ⁸⁵	25 2 32 ³	40 ⁵⁵	22	8 16 29 ⁶⁷	18 41 37 ³	115 ⁴²
23	6 15 55 ¹⁷	24 58 29 ⁰	42 ³²	23	8 18 57 ⁹⁴	18 30 4 ⁷	116 ⁴⁷

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .
SATURDAY 9.				MONDAY 11.			
0	8 21 25 ^{h m s} .90	N.18 18 24 ^{o ' ' "} .7	117 ^{''} .88	0	10 14 6 ^{h m s} .43	N.7 9 0 ^{o ' ' "} .8	154 ^{''} .73
1	8 23 53 ^{h m s} .57	18 6 37 ^{o ' ' "} .4	119 ^{''} .07	1	10 16 20 ^{h m s} .92	6 53 32 ^{o ' ' "} .4	155 ^{''} .07
2	8 26 20 ^{h m s} .94	17 54 43 ^{o ' ' "} .0	120 ^{''} .27	2	10 18 35 ^{h m s} .21	6 38 2 ^{o ' ' "} .0	155 ^{''} .35
3	8 28 48 ^{h m s} .02	17 42 41 ^{o ' ' "} .4	121 ^{''} .42	3	10 20 49 ^{h m s} .29	6 22 29 ^{o ' ' "} .9	155 ^{''} .65
4	8 31 14 ^{h m s} .79	17 30 32 ^{o ' ' "} .9	122 ^{''} .55	4	10 23 3 ^{h m s} .18	6 6 56 ^{o ' ' "} .0	155 ^{''} .92
5	8 33 41 ^{h m s} .26	17 18 17 ^{o ' ' "} .6	123 ^{''} .68	5	10 25 16 ^{h m s} .87	5 51 20 ^{o ' ' "} .5	156 ^{''} .17
6	8 36 7 ^{h m s} .43	17 5 55 ^{o ' ' "} .5	124 ^{''} .80	6	10 27 30 ^{h m s} .36	5 35 43 ^{o ' ' "} .5	156 ^{''} .42
7	8 38 33 ^{h m s} .30	16 53 26 ^{o ' ' "} .7	125 ^{''} .88	7	10 29 43 ^{h m s} .68	5 20 5 ^{o ' ' "} .0	156 ^{''} .62
8	8 40 58 ^{h m s} .86	16 40 51 ^{o ' ' "} .4	126 ^{''} .97	8	10 31 56 ^{h m s} .80	5 4 25 ^{o ' ' "} .3	156 ^{''} .82
9	8 43 24 ^{h m s} .12	16 28 9 ^{o ' ' "} .6	128 ^{''} .02	9	10 34 9 ^{h m s} .76	4 48 44 ^{o ' ' "} .4	157 ^{''} .02
10	8 45 49 ^{h m s} .08	16 15 21 ^{o ' ' "} .5	129 ^{''} .05	10	10 36 22 ^{h m s} .53	4 33 2 ^{o ' ' "} .3	157 ^{''} .17
11	8 48 13 ^{h m s} .74	16 2 27 ^{o ' ' "} .2	130 ^{''} .08	11	10 38 35 ^{h m s} .14	4 17 19 ^{o ' ' "} .3	157 ^{''} .33
12	8 50 38 ^{h m s} .09	15 49 26 ^{o ' ' "} .7	131 ^{''} .07	12	10 40 47 ^{h m s} .58	4 1 35 ^{o ' ' "} .3	157 ^{''} .47
13	8 53 2 ^{h m s} .14	15 36 20 ^{o ' ' "} .3	132 ^{''} .07	13	10 42 59 ^{h m s} .86	3 45 50 ^{o ' ' "} .5	157 ^{''} .58
14	8 55 25 ^{h m s} .89	15 23 7 ^{o ' ' "} .9	133 ^{''} .02	14	10 45 11 ^{h m s} .99	3 30 5 ^{o ' ' "} .0	157 ^{''} .68
15	8 57 49 ^{h m s} .34	15 9 49 ^{o ' ' "} .8	133 ^{''} .97	15	10 47 23 ^{h m s} .97	3 14 18 ^{o ' ' "} .9	157 ^{''} .77
16	9 0 12 ^{h m s} .49	14 56 26 ^{o ' ' "} .0	134 ^{''} .88	16	10 49 35 ^{h m s} .80	2 58 32 ^{o ' ' "} .3	157 ^{''} .83
17	9 2 35 ^{h m s} .34	14 42 56 ^{o ' ' "} .7	135 ^{''} .80	17	10 51 47 ^{h m s} .48	2 42 45 ^{o ' ' "} .3	157 ^{''} .90
18	9 4 57 ^{h m s} .90	14 29 21 ^{o ' ' "} .9	136 ^{''} .68	18	10 53 59 ^{h m s} .03	2 26 57 ^{o ' ' "} .9	157 ^{''} .92
19	9 7 20 ^{h m s} .16	14 15 41 ^{o ' ' "} .8	137 ^{''} .55	19	10 56 10 ^{h m s} .44	2 11 10 ^{o ' ' "} .4	157 ^{''} .95
20	9 9 42 ^{h m s} .12	14 1 56 ^{o ' ' "} .5	138 ^{''} .40	20	10 58 21 ^{h m s} .73	1 55 22 ^{o ' ' "} .7	157 ^{''} .95
21	9 12 3 ^{h m s} .79	13 48 6 ^{o ' ' "} .1	139 ^{''} .25	21	11 0 32 ^{h m s} .89	1 39 35 ^{o ' ' "} .0	157 ^{''} .93
22	9 14 25 ^{h m s} .17	13 34 10 ^{o ' ' "} .6	140 ^{''} .05	22	11 2 43 ^{h m s} .93	1 23 47 ^{o ' ' "} .4	157 ^{''} .90
23	9 16 46 ^{h m s} .26	N.13 20 10 ^{o ' ' "} .3	140 ^{''} .85	23	11 4 54 ^{h m s} .85	N.1 8 0 ^{o ' ' "} .0	157 ^{''} .87
SUNDAY 10.				TUESDAY 12.			
0	9 19 7 ^{h m s} .05	N.13 6 5 ^{o ' ' "} .2	141 ^{''} .62	0	11 7 5 ^{h m s} .66	N.0 52 12 ^{o ' ' "} .8	157 ^{''} .80
1	9 21 27 ^{h m s} .56	12 51 55 ^{o ' ' "} .5	142 ^{''} .38	1	11 9 16 ^{h m s} .36	0 36 26 ^{o ' ' "} .0	157 ^{''} .72
2	9 23 47 ^{h m s} .78	12 37 41 ^{o ' ' "} .2	143 ^{''} .10	2	11 11 26 ^{h m s} .96	0 20 39 ^{o ' ' "} .7	157 ^{''} .63
3	9 26 7 ^{h m s} .72	12 23 29 ^{o ' ' "} .6	143 ^{''} .85	3	11 13 37 ^{h m s} .46	N.0 4 53 ^{o ' ' "} .9	157 ^{''} .52
4	9 28 27 ^{h m s} .37	12 8 59 ^{o ' ' "} .5	144 ^{''} .83	4	11 15 47 ^{h m s} .87	S.0 10 51 ^{o ' ' "} .2	157 ^{''} .40
5	9 30 46 ^{h m s} .77	11 54 32 ^{o ' ' "} .3	145 ^{''} .82	5	11 17 58 ^{h m s} .20	0 26 35 ^{o ' ' "} .6	157 ^{''} .27
6	9 33 5 ^{h m s} .88	11 40 1 ^{o ' ' "} .0	145 ^{''} .88	6	11 20 8 ^{h m s} .43	0 42 19 ^{o ' ' "} .2	157 ^{''} .12
7	9 35 24 ^{h m s} .72	11 25 25 ^{o ' ' "} .7	146 ^{''} .53	7	11 22 18 ^{h m s} .59	0 58 1 ^{o ' ' "} .9	156 ^{''} .93
8	9 37 43 ^{h m s} .29	11 10 46 ^{o ' ' "} .5	147 ^{''} .17	8	11 24 28 ^{h m s} .67	1 13 43 ^{o ' ' "} .5	156 ^{''} .77
9	9 40 1 ^{h m s} .59	10 56 3 ^{o ' ' "} .5	147 ^{''} .77	9	11 26 38 ^{h m s} .68	1 29 24 ^{o ' ' "} .1	156 ^{''} .67
10	9 42 19 ^{h m s} .63	10 41 16 ^{o ' ' "} .9	148 ^{''} .37	10	11 28 48 ^{h m s} .63	1 45 3 ^{o ' ' "} .5	156 ^{''} .55
11	9 44 37 ^{h m s} .41	10 26 26 ^{o ' ' "} .7	148 ^{''} .93	11	11 30 58 ^{h m s} .52	2 0 41 ^{o ' ' "} .6	156 ^{''} .13
12	9 46 54 ^{h m s} .94	10 11 33 ^{o ' ' "} .1	149 ^{''} .50	12	11 33 8 ^{h m s} .34	2 16 18 ^{o ' ' "} .4	155 ^{''} .88
13	9 49 12 ^{h m s} .21	9 56 36 ^{o ' ' "} .1	150 ^{''} .03	13	11 35 18 ^{h m s} .12	2 31 53 ^{o ' ' "} .7	155 ^{''} .63
14	9 51 29 ^{h m s} .24	9 41 35 ^{o ' ' "} .9	150 ^{''} .55	14	11 37 27 ^{h m s} .85	2 47 27 ^{o ' ' "} .5	155 ^{''} .37
15	9 53 46 ^{h m s} .01	9 26 32 ^{o ' ' "} .6	151 ^{''} .05	15	11 39 37 ^{h m s} .54	3 2 59 ^{o ' ' "} .7	155 ^{''} .08
16	9 56 2 ^{h m s} .54	9 11 26 ^{o ' ' "} .3	151 ^{''} .53	16	11 41 47 ^{h m s} .19	3 18 30 ^{o ' ' "} .2	154 ^{''} .78
17	9 58 18 ^{h m s} .83	8 56 17 ^{o ' ' "} .1	152 ^{''} .00	17	11 43 56 ^{h m s} .80	3 33 58 ^{o ' ' "} .9	154 ^{''} .48
18	10 0 34 ^{h m s} .89	8 41 5 ^{o ' ' "} .1	152 ^{''} .43	18	11 46 6 ^{h m s} .39	3 49 25 ^{o ' ' "} .8	154 ^{''} .15
19	10 2 50 ^{h m s} .71	8 25 50 ^{o ' ' "} .3	152 ^{''} .82	19	11 48 15 ^{h m s} .95	4 4 50 ^{o ' ' "} .7	153 ^{''} .80
20	10 5 6 ^{h m s} .30	8 10 33 ^{o ' ' "} .2	153 ^{''} .17	20	11 50 25 ^{h m s} .49	4 20 13 ^{o ' ' "} .5	153 ^{''} .45
21	10 7 21 ^{h m s} .66	7 55 13 ^{o ' ' "} .0	153 ^{''} .58	21	11 52 35 ^{h m s} .01	4 35 34 ^{o ' ' "} .2	153 ^{''} .08
22	10 9 36 ^{h m s} .81	7 39 51 ^{o ' ' "} .0	153 ^{''} .95	22	11 54 44 ^{h m s} .52	4 50 52 ^{o ' ' "} .7	152 ^{''} .70
23	10 11 51 ^{h m s} .73	7 24 27 ^{o ' ' "} .0	154 ^{''} .28	23	11 56 54 ^{h m s} .02	5 6 8 ^{o ' ' "} .9	152 ^{''} .32
24	10 14 6 ^{h m s} .43	N.7 9 0 ^{o ' ' "} .0	154 ^{''} .67	24	12 0 3 ^{h m s} .53	S.5 21 22 ^{o ' ' "} .8	152 ^{''} .00

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>WEDNESDAY 13.</i>				<i>FRIDAY 15.</i>			
0	h m s	° ' "	"	0	h m s	° ' "	"
1	11 59 3.52	S. 5 21 22.8	151.90	1	13 43 50.20	S. 16 20 56.4	117.63
2	12 1 13.02	5 36 34.2	151.48	2	13 46 3.95	16 32 42.2	116.63
3	12 3 22.52	5 51 43.1	151.03	3	13 48 17.84	16 44 22.0	115.62
4	12 5 32.03	6 6 49.3	150.58	4	13 50 31.89	16 55 55.7	114.62
5	12 7 41.55	6 21 52.8	150.13	5	13 52 46.10	17 7 23.4	113.60
6	12 9 51.10	6 36 53.6	149.67	6	13 55 0.46	17 18 45.0	112.55
7	12 12 0.66	6 51 51.6	149.18	7	13 57 14.98	17 30 0.3	111.52
8	12 14 10.25	7 6 46.5	148.67	8	13 59 29.66	17 41 9.4	110.47
9	12 16 19.87	7 21 38.5	148.15	9	14 1 44.50	17 52 12.2	109.40
10	12 18 29.52	7 36 27.4	147.63	10	14 3 59.49	18 3 8.6	108.32
11	12 20 39.21	7 51 13.2	147.07	11	14 6 14.65	18 13 58.5	107.25
12	12 22 48.94	8 5 55.6	146.53	12	14 8 29.97	18 24 42.0	106.16
13	12 24 58.72	8 20 34.8	146.97	13	14 10 45.45	18 35 18.9	105.05
14	12 27 8.55	8 35 10.6	145.38	14	14 13 1.09	18 45 49.2	103.95
15	12 29 18.43	8 49 42.9	144.80	15	14 15 16.89	18 56 12.9	102.83
16	12 31 28.38	9 4 11.7	144.18	16	14 17 32.86	19 6 29.9	101.70
17	12 33 38.38	9 18 36.8	143.57	17	14 19 48.99	19 16 40.1	100.57
18	12 35 48.45	9 32 58.2	142.95	18	14 22 5.28	19 26 43.5	99.40
19	12 37 58.58	9 47 15.9	142.30	19	14 24 21.73	19 36 39.9	98.27
20	12 40 8.79	10 1 29.7	141.65	20	14 26 38.35	19 46 29.5	97.08
21	12 42 19.07	10 15 39.6	140.98	21	14 28 55.13	19 56 12.0	95.82
22	12 44 29.43	10 29 45.5	140.30	22	14 31 12.07	20 5 47.5	94.75
23	12 46 39.88	10 43 47.3	139.62	23	14 33 29.17	20 15 16.0	93.53
23	12 48 50.41	S. 10 57 45.0	138.90	23	14 35 46.43	S. 20 24 37.2	92.35
<i>THURSDAY 14.</i>				<i>SATURDAY 16.</i>			
0	12 51 1.03	S. 11 11 38.4	138.18	0	14 38 3.86	S. 20 33 51.3	91.13
1	12 53 11.74	11 25 27.5	137.47	1	14 40 21.44	20 42 58.1	89.92
2	12 55 22.55	11 39 12.3	136.73	2	14 42 39.18	20 51 57.6	88.68
3	12 57 33.45	11 52 52.7	135.98	3	14 44 57.08	21 0 49.7	87.47
4	12 59 44.46	12 6 28.6	135.22	4	14 47 15.14	21 9 34.5	86.22
5	1 1 55.57	12 19 59.9	134.43	5	14 49 33.34	21 18 11.8	84.97
6	1 3 4 6.80	12 33 26.5	133.63	6	14 51 51.71	21 26 41.6	83.73
7	1 3 6 18.13	12 46 48.5	132.85	7	14 54 10.22	21 35 3.9	82.48
8	1 3 8 29.57	13 0 5.6	132.05	8	14 56 28.88	21 43 18.6	81.17
9	1 3 10 41.13	13 13 17.9	131.25	9	14 58 47.69	21 51 25.6	79.90
10	1 3 12 52.82	13 26 25.4	130.49	10	15 1 6.65	21 59 23.0	78.62
11	1 3 15 4.62	13 39 27.8	129.67	11	15 3 25.75	22 7 16.7	77.28
12	1 3 17 16.54	13 52 25.2	128.72	12	15 5 45.00	22 15 0.7	76.03
13	1 3 19 28.59	14 5 17.5	127.85	13	15 8 4.39	22 22 36.9	74.72
14	1 3 21 40.78	14 18 4.6	126.98	14	15 10 23.91	22 30 5.2	73.42
15	1 3 23 53.09	14 30 46.5	126.10	15	15 12 43.57	22 37 25.7	72.10
16	1 3 26 5.54	14 43 23.1	125.20	16	15 15 3.36	22 44 39.3	70.77
17	1 3 28 18.13	14 55 54.3	124.28	17	15 17 23.28	22 51 42.9	69.43
18	1 3 30 30.85	15 8 20.0	123.38	18	15 19 43.33	22 58 39.5	68.10
19	1 3 32 43.72	15 20 40.3	122.43	19	15 22 3.51	23 5 28.1	66.75
20	1 3 34 56.72	15 33 54.9	121.50	20	15 24 23.81	23 12 8.6	65.42
21	1 3 37 9.87	15 45 9.9	120.58	21	15 26 44.23	23 18 41.1	64.08
22	1 3 39 23.17	15 57 7.2	119.58	22	15 29 4.76	23 25 5.4	62.68
23	1 3 41 36.61	16 9 4.7	118.68	23	15 31 25.42	23 31 21.5	61.33

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

r.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
SUNDAY 17.				TUESDAY 19.			
	<i>h m s</i>	<i>° ' "</i>	<i>"</i>		<i>h m s</i>	<i>° ' "</i>	<i>"</i>
15	33 46 18	S. 23 37 29 5	59 95	0	17 27 8 89	S. 25 45 9 3	8 42
15	36 7 05	23 43 29 2	58 57	1	17 29 29 58	25 44 18 8	9 22
15	38 28 02	23 49 20 6	57 20	2	17 31 50 12	25 43 19 9	11 22
15	40 49 08	23 55 3 8	55 80	3	17 34 10 54	25 42 12 6	12 60
15	43 10 25	24 0 38 6	54 42	4	17 36 30 83	25 40 57 0	14 00
15	45 31 51	24 6 5 1	53 03	5	17 38 50 97	25 39 33 0	15 37
15	47 52 85	24 11 23 3	51 62	6	17 41 10 96	25 38 0 8	16 75
15	50 14 28	24 16 33 0	50 22	7	17 43 30 80	25 36 20 3	18 12
15	52 35 79	24 21 34 3	48 82	8	17 45 50 49	25 34 31 6	19 50
15	54 57 38	24 26 27 2	47 40	9	17 48 10 01	25 32 34 6	20 88
15	57 19 04	24 31 11 6	46 00	10	17 50 29 36	25 30 29 6	22 22
15	59 40 77	24 35 47 6	44 57	11	17 52 48 54	25 28 16 3	23 55
16	2 2 57	24 40 15 0	43 18	12	17 55 7 56	25 25 55 0	24 90
16	4 24 42	24 44 33 9	41 72	13	17 57 26 38	25 23 25 6	26 22
16	6 46 34	24 48 44 3	40 22	14	17 59 45 02	25 20 48 2	27 57
16	9 8 30	24 52 46 2	38 87	15	18 2 3 46	25 18 2 8	28 82
16	11 30 30	24 56 39 4	37 45	16	18 4 21 71	25 15 9 5	29 22
16	13 52 35	25 0 24 1	36 02	17	18 6 39 76	25 12 8 2	31 52
16	16 14 44	25 4 0 2	34 58	18	18 8 57 61	25 8 59 0	32 82
16	18 36 55	25 7 27 7	32 15	19	18 11 15 26	25 5 42 1	34 12
16	20 58 69	25 10 46 6	31 72	20	18 13 32 69	25 2 17 3	35 42
16	23 20 86	25 13 56 9	30 27	21	18 15 49 90	24 58 44 7	36 70
16	25 43 04	25 16 58 5	28 82	22	18 18 6 90	24 55 4 5	37 98
16	28 5 23	S. 25 19 51 5	27 38	23	18 20 23 68	S. 24 51 16 6	39 27
MONDAY 18.				WEDNESDAY 20.			
16	30 27 43	S. 25 22 35 8	25 98	0	18 22 40 23	S. 24 47 21 0	40 52
16	32 49 63	25 25 11 5	24 50	1	18 24 56 55	24 43 17 9	41 78
16	35 11 83	25 27 38 5	23 07	2	18 27 12 64	24 39 7 2	42 03
16	37 34 02	25 29 56 9	21 02	3	18 29 28 49	24 34 49 0	44 27
16	39 56 20	25 32 6 6	20 17	4	18 31 44 11	24 30 23 4	45 50
16	42 18 36	25 34 7 6	18 72	5	18 33 59 48	24 25 50 4	46 72
16	44 40 49	25 36 0 0	17 22	6	18 36 14 60	24 21 10 0	47 32
16	47 2 60	25 37 43 7	15 82	7	18 38 29 48	24 16 22 4	49 15
16	49 24 67	25 39 18 7	14 40	8	18 40 44 10	24 11 27 5	50 22
16	51 46 70	25 40 45 1	12 97	9	18 42 58 47	24 6 25 4	51 55
16	54 8 69	25 42 2 9	11 52	10	18 45 12 58	24 1 16 1	52 72
16	56 30 63	25 43 12 0	10 08	11	18 47 26 43	23 55 59 8	52 90
16	58 52 51	25 44 12 5	8 65	12	18 49 40 02	23 50 36 4	55 07
17	1 14 33	25 45 4 4	7 20	13	18 51 53 34	23 45 6 0	56 22
17	3 36 09	25 45 47 6	5 72	14	18 54 6 40	23 39 28 7	57 35
17	5 57 78	25 46 22 3	4 35	15	18 56 19 18	23 33 44 6	58 50
17	8 19 39	25 46 48 4	2 90	16	18 58 31 70	23 27 53 6	59 62
17	10 40 92	25 47 5 8	1 50	17	19 0 43 94	23 21 55 8	60 75
17	13 2 36	25 47 14 8	0 08	18	19 2 55 90	23 15 51 3	61 87
17	15 23 71	25 47 15 1	1 25	19	19 5 7 59	23 9 40 1	62 95
17	17 44 96	25 47 7 0	2 72	20	19 7 18 99	23 3 22 4	64 07
17	20 6 11	25 46 50 3	4 20	21	19 9 30 12	22 56 58 0	65 12
17	22 27 15	25 46 25 1	5 62	22	19 11 40 96	22 50 27 2	66 20
17	24 48 08	25 45 51 4	7 02	23	19 13 51 52	22 43 50 0	67 22
17	27 8 89	S. 25 45 9 3		24	19 16 1 79	S. 22 37 6 3	

M.E.S.:

TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

hour.	Right Ascension.	Declination.	Dist. from Sun for 10°.	Ascension.	Declination.	Dist. from Sun for 10°.	
THURSDAY 21.				FRIDAY 21.			
0	19 16 1 ^h 79 ^m	S. 22 37 6 ^o 3 ⁿ	68 ^o 23 ⁿ	0	20 43 45 ^h 4 ^m	77 ^o 47 ⁿ	
1	19 18 11 78	22 30 16 3	69 27	1	20 51 30 2	76 47	
2	19 20 21 48	22 23 20 1	70 42	2	20 59 9 0	75 42	
3	19 22 30 89	22 16 17 6	71 42	3	21 07 41 5	74 38	
4	19 24 40 01	22 9 9 0	72 46	4	21 15 28 7 8	73 32	
5	19 26 48 84	22 1 54 3	73 47	5	21 23 14 7	72 25	
6	19 28 57 38	21 54 38 5	74 45	6	21 30 59 7 8	71 17	
7	19 31 5 63	21 47 6 8	75 43	7	21 38 47 0	70 08	
8	19 33 13 58	21 39 34 2	76 42	8	21 46 34 0	68 55	
9	19 35 21 24	21 31 55 7	77 39	9	21 54 20 0	67 40	
10	19 37 28 61	21 24 11 4	78 35	10	21 62 06 29	66 25	
11	19 39 35 68	21 16 21 3	79 28	11	21 69 52 34	65 10	
12	19 41 42 46	21 8 25 6	80 22	12	21 77 38 38	63 55	
13	19 43 48 94	21 0 24 3	81 16	13	21 85 24 42	62 40	
14	19 45 55 13	20 52 17 4	82 07	14	21 93 10 46	61 25	
15	19 48 1 03	20 44 5 0	82 97	15	21 100 56 50	60 10	
16	19 50 6 63	20 36 47 2	82 87	16	21 108 42 54	58 55	
17	19 52 11 93	20 27 24 0	82 77	17	21 116 28 58	57 40	
18	19 54 16 94	20 18 55 4	82 63	18	21 124 14 62	56 25	
19	19 56 21 66	20 10 21 6	82 50	19	21 131 59 66	55 10	
20	19 58 26 08	20 1 42 6	82 37	20	21 139 45 70	53 55	
21	20 0 30 21	19 52 58 4	82 20	21	21 147 30 74	52 40	
22	20 2 34 05	19 44 9 2	82 08	22	21 155 15 78	51 25	
23	20 4 37 59	S. 19 35 14 9	82 08	23	21 162 59 82	50 10	
FRIDAY 22.				SUNDAY 24.			
0	20 6 40 83	S. 19 26 15 6	90 70	0	21 40 5 84	S. 10 56 11 6	118 92
1	20 8 43 82	19 17 11 4	91 52	1	21 41 57 04	10 44 18 1	119 28
2	20 10 46 49	19 8 8 3	92 30	2	21 43 48 07	10 32 22 4	119 67
3	20 12 48 88	18 58 48 5	93 10	3	21 45 38 91	10 20 24 4	120 00
4	20 14 50 98	18 49 29 9	93 58	4	21 47 29 59	10 8 24 4	120 37
5	20 16 52 79	18 40 6 6	94 66	5	21 49 20 09	9 56 22 2	120 70
6	20 18 54 32	18 30 38 7	95 42	6	21 51 10 42	9 44 18 0	121 03
7	20 20 55 57	18 21 6 2	96 16	7	21 53 0 59	9 32 11 8	121 35
8	20 22 56 53	18 11 29 3	96 90	8	21 54 50 59	9 20 3 7	121 67
9	20 24 57 22	18 1 47 9	97 62	9	21 56 40 44	9 7 53 7	121 98
10	20 26 57 62	17 52 2 1	98 32	10	21 58 30 14	8 55 41 8	122 28
11	20 28 57 74	17 42 12 1	99 07	11	22 0 19 68	8 43 28 1	122 58
12	20 30 57 59	17 32 17 7	99 78	12	22 2 9 07	8 31 12 6	123 27
13	20 32 57 17	17 22 19 2	100 45	13	22 3 58 32	8 18 55 4	123 53
14	20 34 56 47	17 12 16 5	101 12	14	22 5 47 42	8 6 36 6	124 18
15	20 36 55 50	17 2 9 8	101 40	15	22 7 36 39	7 54 16 1	124 42
16	20 38 54 26	16 51 59 0	102 47	16	22 9 25 23	7 41 5	125 5
17	20 40 52 76	16 41 44 2	103 12	17	22 11 13 93	7 29	125 28
18	20 42 50 99	16 31 25 5	103 77	18	22 13 2 51	7 17	125 58
19	20 44 48 95	16 21 8 9	104 28	19	22 14 50 96	7 5	126 25
20	20 46 46 66	16 10 36 6	105 02	20	22 16 39 30	6 53	126 48
21	20 48 44 10	16 0 6 4	105 62	21	22 18 27 52	6 41	127 17
22	20 50 41 29	15 49 32 6	106 22	22	22 20 15 62	6 29	127 42
23	20 52 38 22	15 38 55 2	106 78	23	22 22 3 62	6 17	128 12

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{ms} .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{ms} .
MONDAY 25.				WEDNESDAY 27.			
0	^{h m s} 22 23 51.51	^{° ' "} S. 6 2 6.0	125.73	0	^{h m s} 23 49 19.42	^{° ' "} N. 4 11 8.9	127.7
1	22 25 39.30	5 49 31.6	125.92	1	23 51 6.77	4 23 52.5	127.7
2	22 27 26.99	5 36 56.1	126.10	2	23 52 54.20	4 36 35.3	127.0
3	22 29 14.59	5 24 19.5	126.27	3	23 54 41.72	4 49 17.3	126.8
4	22 31 2.10	5 11 41.9	126.47	4	23 56 29.34	5 1 58.5	126.7
5	22 32 49.52	4 59 3.1	126.60	5	23 58 17.06	5 14 38.7	126.5
6	22 34 36.85	4 46 23.5	126.78	6	0 0 4.88	5 27 18.0	126.3
7	22 36 24.11	4 33 42.8	126.92	7	0 1 52.81	5 39 56.3	126.2
8	22 38 11.29	4 21 1.3	127.07	8	0 3 40.85	5 52 32.6	126.0
9	22 39 58.39	4 8 18.9	127.18	9	0 5 29.00	6 5 9.9	125.8
10	22 41 45.43	3 55 35.8	127.23	10	0 7 17.27	6 17 45.0	125.6
11	22 43 32.40	3 42 51.8	127.45	11	0 9 5.67	6 30 19.0	125.47
12	22 45 19.31	3 30 7.1	127.57	12	0 10 54.18	6 42 51.8	125.27
13	22 47 6.16	3 17 21.7	127.67	13	0 12 42.83	6 55 23.4	125.08
14	22 48 52.96	3 4 35.7	127.77	14	0 14 31.62	7 7 53.7	124.82
15	22 50 39.71	2 51 49.1	127.87	15	0 16 20.55	7 20 22.6	124.62
16	22 52 26.41	2 39 1.9	127.95	16	0 18 9.62	7 32 50.3	124.37
17	22 54 13.07	2 26 14.2	128.03	17	0 19 58.84	7 45 16.5	124.12
18	22 55 59.69	2 13 26.0	128.12	18	0 21 48.21	7 57 41.2	123.88
19	22 57 46.28	2 0 37.3	128.17	19	0 23 37.74	8 10 4.5	123.63
20	22 59 32.83	1 47 48.3	128.23	20	0 25 27.43	8 22 26.3	123.37
21	23 1 19.36	1 34 58.9	128.30	21	0 27 17.28	8 34 46.5	123.08
22	23 3 5.86	1 22 9.1	128.33	22	0 29 7.31	8 47 5.0	122.82
23	23 4 52.34	S. 1 9 19.1	128.38	23	0 30 57.50	N. 8 59 21.9	122.53
TUESDAY 26.				THURSDAY 28.			
0	23 6 38.81	S. 0 56 28.8	128.42	0	0 32 47.86	N. 9 11 37.1	122.23
1	23 8 25.26	0 43 38.3	128.45	1	0 34 38.41	9 23 50.5	121.93
2	23 10 11.71	0 30 47.6	128.45	2	0 36 29.15	9 36 2.1	121.63
3	23 11 58.15	0 17 56.9	128.48	3	0 38 20.07	9 48 11.9	121.32
4	23 13 44.60	S. 0 5 6.0	128.48	4	0 40 11.18	10 0 19.8	121.00
5	23 15 31.04	N. 0 7 44.9	128.50	5	0 42 2.49	10 12 25.8	120.67
6	23 17 17.49	0 20 35.9	128.48	6	0 43 54.01	10 24 29.8	120.32
7	23 19 3.96	0 33 26.8	128.47	7	0 45 45.72	10 36 31.7	119.98
8	23 20 50.44	0 46 17.6	128.45	8	0 47 37.65	10 48 31.6	119.63
9	23 22 36.94	0 59 8.3	128.43	9	0 49 29.47	2 11 0 29.4	119.27
10	23 24 23.46	1 11 58.9	128.38	10	0 51 18.58	2 1 12 25.0	118.90
11	23 26 10.01	1 24 49.2	128.37	11	0 53 8.63	2 1 24 18.4	118.52
12	23 27 56.59	1 37 39.4	128.32	12	0 55 0.02	2 1 36 9.5	118.13
13	23 29 43.21	1 50 29.3	128.25	13	0 56 52.44	2 1 47 58.3	117.75
14	23 31 29.86	2 3 18.8	128.20	14	0 58 44.84	2 1 59 44.8	117.38
15	23 33 16.56	2 16 8.0	128.15	15	0 59 37.26	2 3 9 11 28.9	116.93
16	23 35 3.30	2 28 56.9	128.07	16	0 59 29.68	2 3 23 10.5	116.53
17	23 36 50.10	2 41 45.3	127.98	17	1 0 22.10	2 4 49.6	116.10
18	23 38 36.95	2 54 33.2	127.90	18	1 0 14.52	2 5 26.2	115.67
19	23 40 23.86	3 7 20.6	127.82	19	1 0 7.96	3 0 0.2	115.22
20	23 42 10.83	3 20 7.5	127.73	20	1 10 18.46	3 9 31.5	114.75
21	23 43 57.87	3 32 53.9	127.60	21	1 12 13.46	3 19 0.0	114.32
22	23 45 44.98	3 45 39.5	127.52	22	1 14 8.72	3 32 25.9	113.83
23	23 47 32.16	3 58 24.6	127.38	23	1 16 4.24	3 43 48.9	113.38
24	23 49 19.42	N. 4 11 8.9		24	1 18 0.04	N. 13 55 9.0	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Dist. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Dist. Dec. for 10 ^m .
<i>FRIDAY 29.</i>				<i>SUNDAY 31.</i>			
0	1 18 0 ^h 04 ^m	N. 13 55 9 ^o	112 ^h 87 ^m	0	2 57 3 ^h 09 ^m	N. 21 43 45 ^o	77 ^h 47 ^m
1	1 19 56 ^h 12 ^m	14 6 26 ^o 2 ⁿ	112 ^h 87 ^m	1	2 59 16 ^h 03 ^m	21 51 30 ^o 8 ⁿ	76 ^h 47 ^m
2	1 21 52 ^h 47 ^m	14 17 40 ^o 4 ⁿ	111 ^h 87 ^m	2	3 1 29 ^h 36 ^m	21 59 9 ^o 0 ⁿ	75 ^h 42 ^m
3	1 23 49 ^h 11 ^m	14 28 51 ^o 6 ⁿ	111 ^h 37 ^m	3	3 3 43 ^h 10 ^m	22 6 41 ^o 5 ⁿ	74 ^h 38 ^m
4	1 25 46 ^h 03 ^m	14 39 59 ^o 8 ⁿ	110 ^h 82 ^m	4	3 5 57 ^h 23 ^m	22 14 7 ^o 8 ⁿ	73 ^h 32 ^m
5	1 27 43 ^h 24 ^m	14 51 4 ^o 7 ⁿ	110 ^h 30 ^m	5	3 8 11 ^h 78 ^m	22 21 27 ^o 7 ⁿ	72 ^h 25 ^m
6	1 29 40 ^h 75 ^m	15 2 6 ^o 5 ⁿ	109 ^h 75 ^m	6	3 10 26 ^h 72 ^m	22 28 41 ^o 2 ⁿ	71 ^h 17 ^m
7	1 31 38 ^h 55 ^m	15 13 5 ^o 0 ⁿ	109 ^h 20 ^m	7	3 12 42 ^h 07 ^m	22 35 48 ^o 2 ⁿ	70 ^h 08 ^m
8	1 33 36 ^h 66 ^m	15 24 0 ^o 2 ⁿ	108 ^h 65 ^m	8	3 14 57 ^h 82 ^m	22 42 48 ^o 7 ⁿ	68 ^h 35 ^m
9	1 35 35 ^h 07 ^m	15 34 52 ^o 1 ⁿ	108 ^h 07 ^m	9	3 17 13 ^h 97 ^m	22 49 48 ^o 4 ⁿ	67 ^h 25 ^m
10	1 37 33 ^h 78 ^m	15 45 40 ^o 5 ⁿ	107 ^h 48 ^m	10	3 19 30 ^h 52 ^m	22 56 29 ^o 5 ⁿ	66 ^h 72 ^m
11	1 39 32 ^h 81 ^m	15 56 25 ^o 4 ⁿ	106 ^h 90 ^m	11	3 21 47 ^h 48 ^m	23 3 9 ^o 8 ⁿ	65 ^h 57 ^m
12	1 41 32 ^h 14 ^m	16 7 6 ^o 8 ⁿ	106 ^h 30 ^m	12	3 24 4 ^h 83 ^m	23 9 43 ^o 2 ⁿ	64 ^h 40 ^m
13	1 43 31 ^h 80 ^m	16 17 44 ^o 6 ⁿ	105 ^h 68 ^m	13	3 26 22 ^h 60 ^m	23 16 9 ^o 6 ⁿ	63 ^h 23 ^m
14	1 45 31 ^h 78 ^m	16 28 18 ^o 7 ⁿ	105 ^h 07 ^m	14	3 28 40 ^h 76 ^m	23 22 29 ^o 0 ⁿ	62 ^h 03 ^m
15	1 47 32 ^h 08 ^m	16 38 49 ^o 1 ⁿ	104 ^h 43 ^m	15	3 30 59 ^h 33 ^m	23 28 41 ^o 2 ⁿ	60 ^h 25 ^m
16	1 49 32 ^h 71 ^m	16 49 15 ^o 7 ⁿ	103 ^h 20 ^m	16	3 33 18 ^h 29 ^m	23 34 46 ^o 3 ⁿ	59 ^h 65 ^m
17	1 51 33 ^h 68 ^m	16 59 38 ^o 5 ⁿ	103 ^h 15 ^m	17	3 35 37 ^h 66 ^m	23 40 44 ^o 2 ⁿ	58 ^h 42 ^m
18	1 53 34 ^h 98 ^m	17 9 57 ^o 4 ⁿ	102 ^h 48 ^m	18	3 37 57 ^h 41 ^m	23 46 34 ^o 7 ⁿ	57 ^h 18 ^m
19	1 55 36 ^h 61 ^m	17 20 12 ^o 3 ⁿ	101 ^h 22 ^m	19	3 40 17 ^h 57 ^m	23 52 17 ^o 8 ⁿ	55 ^h 33 ^m
20	1 57 38 ^h 39 ^m	17 30 23 ^o 2 ⁿ	101 ^h 13 ^m	20	3 42 38 ^h 11 ^m	23 57 53 ^o 4 ⁿ	54 ^h 68 ^m
21	1 59 40 ^h 91 ^m	17 40 30 ^o 0 ⁿ	100 ^h 45 ^m	21	3 44 59 ^h 05 ^m	24 3 21 ^o 5 ⁿ	53 ^h 40 ^m
22	2 1 43 ^h 57 ^m	17 50 32 ^o 7 ⁿ	99 ^h 73 ^m	22	3 47 20 ^h 38 ^m	24 8 41 ^o 9 ⁿ	52 ^h 12 ^m
23	2 3 46 ^h 59 ^m	N. 18 0 31 ^o 1 ⁿ	99 ^h 03 ^m	23	3 49 42 ^h 09 ^m	N. 24 13 54 ^o 6 ⁿ	50 ^h 22 ^m
<i>SATURDAY 30.</i>				<i>MONDAY, AUG. 1.</i>			
0	2 5 49 ^h 96 ^m	N. 18 10 25 ^o 3 ⁿ	98 ^h 30 ^m	0	3 52 4 ^h 19 ^m	N. 24 18 59 ^o 5 ⁿ	
1	2 7 53 ^h 69 ^m	18 20 15 ^o 1 ⁿ	97 ^h 58 ^m				
2	2 9 57 ^h 77 ^m	18 30 0 ^o 6 ⁿ	96 ^h 22 ^m				
3	2 12 2 ^h 22 ^m	18 39 41 ^o 5 ⁿ	96 ^h 08 ^m				
4	2 14 7 ^h 03 ^m	18 49 18 ^o 0 ⁿ	95 ^h 30 ^m				
5	2 16 12 ^h 21 ^m	18 58 49 ^o 8 ⁿ	94 ^h 52 ^m				
6	2 18 17 ^h 76 ^m	19 8 16 ^o 9 ⁿ	93 ^h 73 ^m				
7	2 20 23 ^h 68 ^m	19 17 39 ^o 3 ⁿ	92 ^h 93 ^m				
8	2 22 29 ^h 97 ^m	19 26 56 ^o 9 ⁿ	92 ^h 10 ^m				
9	2 24 36 ^h 64 ^m	19 36 9 ^o 5 ⁿ	91 ^h 30 ^m				
10	2 26 43 ^h 69 ^m	19 45 17 ^o 3 ⁿ	90 ^h 45 ^m				
11	2 28 51 ^h 11 ^m	19 54 20 ^o 0 ⁿ	89 ^h 60 ^m				
12	2 30 58 ^h 92 ^m	20 3 17 ^o 6 ⁿ	88 ^h 73 ^m				
13	2 33 7 ^h 11 ^m	20 12 10 ^o 0 ⁿ	87 ^h 87 ^m				
14	2 35 15 ^h 69 ^m	20 20 57 ^o 2 ⁿ	86 ^h 98 ^m				
15	2 37 24 ^h 66 ^m	20 29 39 ^o 1 ⁿ	86 ^h 10 ^m				
16	2 39 34 ^h 02 ^m	20 38 15 ^o 7 ⁿ	85 ^h 17 ^m				
17	2 41 43 ^h 77 ^m	20 46 46 ^o 7 ⁿ	84 ^h 27 ^m				
18	2 43 53 ^h 91 ^m	20 55 12 ^o 3 ⁿ	83 ^h 32 ^m				
19	2 46 4 ^h 45 ^m	21 3 32 ^o 2 ⁿ	82 ^h 38 ^m				
20	2 48 15 ^h 38 ^m	21 11 46 ^o 5 ⁿ	81 ^h 42 ^m				
21	2 50 26 ^h 71 ^m	21 19 55 ^o 0 ⁿ	80 ^h 45 ^m				
22	2 52 38 ^h 44 ^m	21 27 57 ^o 7 ⁿ	79 ^h 48 ^m				
23	2 54 50 ^h 57 ^m	21 35 54 ^o 6 ⁿ	78 ^h 47 ^m				
24	2 57 3 ^h 09 ^m	N. 21 43 45 ^o 4 ⁿ					

PHASES OF THE MOON.

- New Moon - - - 7 19 0^d 7^h 0^m
- ☽ First Quarter - - 14 10 5^d 1^h 1^m
- Full Moon - - - 21 22 57^d 2^h 2^m
- ☾ Last Quarter - - 30 2 41^d 8^h 8^m

- ☾ Perigee - - - - - 9 10^d 10^h 10^m
- ☾ Apogee - - - - - 25 10^d 10^h 10^m

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.	P. L. of diff.	III ^h .	P. L. of diff.	VI ^h .	P. L. of diff.	IX ^h .	P. L. of diff.	
1	Saturn W.	93 34 8	2925	95 5 55	2914	96 37 56	2903	98 10 11	2891	
	Jupiter W.	86 1 33	2905	87 33 45	2895	89 6 10	2884	90 38 50	2872	
	α Aquilæ W.	74 39 53	2850	75 59 22	2831	77 19 12	2813	78 39 22	2495	
	Fomalhaut W.	49 56 29	2688	51 13 29	2647	52 31 13	2607	53 49 40	2568	
	Aldebaran E.	53 40 59	2027	52 11 32	2029	50 41 55	2022	49 12 10	2014	
	SUN E.	84 16 33	2303	82 52 25	2292	81 28 4	2279	80 3 28	2267	
2	α Aquilæ W.	85 25 3	2411	86 47 7	2396	88 9 28	2380	89 32 7	2366	
	Fomalhaut W.	60 31 43	2403	61 53 56	2373	63 16 43	2345	64 40 2	2327	
	α Pegasi W.	37 44 40	2353	39 9 46	2315	40 35 38	2177	42 2 15	2141	
	Aldebaran E.	41 41 13	2282	40 10 38	2277	38 39 57	2273	37 9 10	2270	
	SUN E.	72 56 38	2199	71 30 27	2183	70 3 57	2167	68 37 8	2152	
	3	α Aquilæ W.	96 29 23	2300	97 53 35	2288	99 18 1	2277	100 42 40	2266
Fomalhaut W.		71 44 29	2188	73 10 52	2165	74 37 43	2142	76 5 2	2119	
α Pegasi W.		49 25 23	2298	50 55 51	2260	52 26 54	2234	53 58 30	2208	
Aldebaran E.		29 34 50	2280	28 4 12	2290	26 33 47	2007	25 3 43	2020	
SUN E.		61 18 16	2069	59 49 28	2051	58 20 18	2024	56 50 17	2016	
4		Fomalhaut W.	83 28 17	2014	84 58 12	2295	86 28 31	2276	87 59 14	2258
	α Pegasi W.	61 44 31	2787	63 19 16	2765	64 54 30	2743	66 30 13	2721	
	α Arietis W.	18 7 12	2753	19 42 42	2713	21 19 5	2677	22 56 16	2646	
	SUN E.	49 17 34	2225	47 45 47	2208	46 13 35	2287	44 40 59	2269	
	5	α Pegasi W.	74 35 54	2618	76 14 24	2599	77 53 20	2580	79 32 42	2562
		α Arietis W.	31 11 51	2517	32 52 40	2496	34 33 59	2475	36 15 48	2455
SUN E.		36 52 4	2776	35 17 5	2758	33 41 42	2740	32 5 55	2722	
10		SUN W.	30 26 56	2382	32 10 56	2286	33 54 51	2289	35 38 42	2292
		Spica ♀ E.	63 29 30	2104	61 38 37	2106	59 47 47	2110	57 57 3	2113
		Antares E.	109 10 55	2096	107 19 50	2098	105 28 47	2101	103 37 49	2103
	11	SUN W.	44 16 31	2417	45 59 42	2424	47 42 42	2421	49 25 33	2428
		Venus W.	12 42 11	2729	14 18 13	2687	15 55 11	2659	17 32 46	2641
		Spica ♀ E.	48 44 58	2140	46 54 59	2147	45 5 11	2155	43 15 35	2162
Antares E.		94 24 25	2128	92 34 8	2134	90 44 0	2140	88 54 2	2147	
12		SUN W.	57 56 59	2482	59 38 38	2492	61 20 3	2502	63 1 14	2512
		Venus W.	25 44 17	2622	27 22 42	2625	29 1 3	2620	30 39 17	2626
	Regulus W.	20 25 38	2254	22 12 45	2254	23 59 52	2256	25 46 57	2259	
	Spica ♀ E.	34 10 48	2211	32 22 36	2223	30 34 42	2224	28 47 5	2248	
	Antares E.	79 47 4	2188	77 58 18	2197	76 9 46	2206	74 21 28	2217	
	Saturn E.	112 56 46	2168	111 7 30	2177	109 18 27	2186	107 29 38	2196	
13	SUN W.	71 23 28	2267	73 3 8	2279	74 42 32	2291	76 21 39	2262	
	Venus W.	38 48 2	2678	40 25 11	2688	42 2 7	2698	43 38 49	2709	
	Regulus W.	34 40 27	2294	36 26 36	2302	38 12 33	2311	39 58 16	2321	
	Antares E.	65 23 42	2268	63 36 56	2279	61 50 25	2290	60 4 11	2302	
	Saturn E.	98 29 17	2247	96 41 59	2258	94 54 58	2269	93 8 13	2280	
	Jupiter E.	105 22 49	2229	103 35 4	2239	101 47 35	2250	100 0 22	2261	
14	SUN W.	84 33 11	2664	86 10 39	2676	87 47 51	2689	89 24 45	2701	
	Venus W.	51 38 40	2766	53 13 52	2779	54 48 48	2790	56 23 29	2802	
	Regulus W.	48 43 14	2373	50 27 28	2384	52 11 26	2394	53 55 9	2405	
	Antares E.	51 17 8	2359	49 32 34	2370	47 48 16	2382	46 4 16	2394	

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.			P.L. of diff.	XV ^b .			P.L. of diff.	XVIII ^b .			P.L. of diff.	XXI ^b .			P.L. of diff.
		°	'	"		°	'	"		°	'	"		°	'	"	
1	Saturn W.	99	42	41	2880	101	15	26	2868	102	48	26	2855	104	21	43	2842
	Jupiter W.	92	11	45	2860	93	44	55	2848	95	18	21	2835	96	52	3	2822
	α Aquilæ W.	79	59	52	3477	81	20	42	3461	82	41	50	3443	84	3	18	3428
	Fomalhaut W.	55	8	49	3523	56	28	36	3499	57	49	2	3465	59	10	5	3424
	Aldebaran E.	47	42	15	3008	46	12	12	3002	44	42	1	2994	43	11	41	2988
SUN E.	78	38	38	3252	77	13	32	3240	75	48	11	3226	74	22	33	3212	
2	α Aquilæ W.	90	55	2	3352	92	18	14	3338	93	41	42	3325	95	5	25	3312
	Fomalhaut W.	66	3	54	3290	67	28	17	3264	68	53	11	3237	70	18	36	3213
	α Pegasi W.	43	29	35	3108	44	57	35	3076	46	26	14	3046	47	55	30	3016
	Aldebaran E.	35	38	19	2967	34	7	25	2966	32	36	30	2969	31	5	38	2952
	SUN E.	67	10	2	3136	65	42	35	3119	64	14	49	3102	62	46	42	3087
3	α Aquilæ W.	102	7	31	3256	103	32	34	3248	104	57	46	3240	106	23	8	3233
	Fomalhaut W.	77	32	48	3096	79	1	2	2076	80	29	41	3055	81	58	46	3034
	α Pegasi W.	55	30	39	2883	57	3	20	2858	58	36	33	2835	60	10	16	2810
	Aldebaran E.	23	34	7	3061	22	5	9	3103	20	37	3	3161	19	10	7	3238
	SUN E.	55	20	54	2998	53	50	39	2979	52	20	0	2961	50	48	59	2943
4	Fomalhaut W.	89	30	19	2940	91	1	47	2923	92	33	36	2908	94	5	45	2892
	α Pegasi W.	68	6	25	2699	69	43	6	2679	71	20	14	2658	72	57	50	2638
	α Arietis W.	24	34	9	2617	26	12	41	2590	27	51	50	2564	29	31	34	2540
	SUN E.	43	8	0	2850	41	34	37	2831	40	0	50	2813	38	26	39	2795
	α Pegasi W.	81	12	29	2544	82	52	41	2528	84	33	16	2510	86	14	15	2494
5	α Arietis W.	37	58	5	2434	39	40	51	2416	41	24	3	2398	43	7	41	2380
	SUN E.	30	29	44	2705	28	53	11	2687	27	16	14	2670	25	38	54	2653
	SUN W.	37	22	29	2396	39	6	10	2401	40	49	44	2405	42	33	11	2410
	Spica ♀ E.	56	6	23	2117	54	15	50	2122	52	25	25	2127	50	35	7	2133
	Antares E.	101	46	55	2107	99	56	7	2112	98	5	26	2116	96	14	51	2132
11	SUN W.	51	8	14	2446	52	50	44	2455	54	33	1	2463	56	15	6	2472
	Venus W.	19	10	45	2630	20	48	59	2624	22	27	22	2620	24	5	49	2620
	Spica ♀ E.	41	26	10	2171	39	36	58	2180	37	48	0	2189	35	59	16	2200
	Antares E.	87	4	15	2155	85	14	39	2162	83	25	15	2171	81	36	3	2179
	SUN W.	64	42	11	2522	66	22	54	2534	68	3	20	2544	69	43	32	2556
12	Venus W.	32	17	23	2643	33	55	19	2651	35	33	5	2659	37	10	40	2669
	Regulus W.	27	33	57	2264	29	20	49	2270	31	7	32	2277	32	54	5	2285
	Spica ♀ E.	26	59	49	2262	25	12	53	2277	23	26	20	2294	21	40	11	2313
	Antares E.	72	33	25	2226	70	45	36	2237	68	58	3	2247	67	10	45	2257
	Saturn E.	105	41	4	2205	103	52	44	2216	102	4	40	2225	100	16	50	2237
13	SUN W.	78	0	31	2615	79	39	6	2627	81	17	24	2635	83	26	26	2652
	Venus W.	45	15	17	2720	46	51	30	2731	48	27	22	2738	50	13	13	2754
	Regulus W.	41	43	45	2331	43	28	59	2341	45	13	51	2348	47	1	52	2362
	Antares E.	58	18	14	2312	56	32	32	2324	54	47	7	2331	52	36	16	2346
	Saturn E.	91	21	44	2291	89	35	31	2302	87	49	3	2310	85	38	10	2324
Jupiter E.	98	13	25	2272	96	26	45	2281	94	17	38	2290	92	10	48	2300	
14	SUN W.	91	1	24	2714	92	37	45	2724	94	8	38	2732	96	1	38	2740
	Venus W.	57	57	54	2815	59	32	3	2824	61	19	3	2832	63	10	3	2840
	Regulus W.	55	38	36	2417	57	21	47	2425	55	10	47	2433	53	1	47	2441
	Antares E.	44	20	32	2405	42	37	5	2413	40	26	5	2421	38	11	5	2429

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Noon.			III ^h .			VI ^h .			IX ^h .						
			P. L. of diff.	°	'	"	P. L. of diff.	°	'	"	P. L. of diff.	°	'	"	P. L. of diff.	°	'	"
14	Saturn	E.	84	18	34	2337	82	33	28	2348	80	48	39	2360	79	4	7	2372
	Jupiter	E.	91	8	25	2318	89	22	52	2329	87	37	35	2341	85	52	36	2353
15	SUN	W.	97	25	10	2764	99	0	25	2776	100	35	24	2789	102	10	7	2801
	Venus	W.	64	12	54	2863	65	46	0	2876	67	18	49	2888	68	51	23	2900
	Regulus	W.	62	29	44	2461	64	11	52	2473	65	53	43	2484	67	35	19	2495
	Antares	E.	37	28	23	2453	35	46	3	2463	34	3	58	2476	32	22	11	2487
	Saturn	E.	70	25	37	2429	68	42	44	2441	67	0	8	2453	65	17	48	2465
	Jupiter	E.	77	11	47	2410	75	28	27	2422	73	45	23	2433	72	2	35	2444
α Aquilæ	E.	92	12	22	3006	90	42	17	3018	89	12	26	3030	87	42	50	3043	
16	SUN	W.	109	59	44	2861	111	32	53	2873	113	5	46	2884	114	38	25	2896
	Venus	W.	76	30	20	2961	78	1	22	2973	79	32	9	2985	81	2	40	2996
	Regulus	W.	75	59	26	2550	77	39	30	2561	79	19	19	2572	80	58	53	2583
	Saturn	E.	56	50	9	2520	55	9	23	2531	53	28	53	2543	51	48	39	2553
	Jupiter	E.	63	32	34	2500	61	51	21	2510	60	10	22	2522	58	29	39	2532
	α Aquilæ	E.	80	19	4	3119	78	51	17	3135	77	23	50	3154	75	56	46	3173
17	SUN	W.	122	18	0	2952	123	49	13	2964	125	20	11	2974	126	50	57	2985
	Venus	W.	88	31	42	3053	90	0	49	3065	91	29	41	3077	92	58	19	3087
	Spica ♀	W.	35	11	15	2646	36	49	8	2655	38	26	49	2663	40	4	19	2672
	Saturn	E.	43	31	6	2606	41	52	19	2615	40	13	45	2626	38	35	26	2636
	Jupiter	E.	50	9	40	2584	48	30	23	2594	46	51	20	2604	45	12	30	2614
	α Aquilæ	E.	68	47	36	3286	67	23	8	3313	65	59	11	3340	64	35	46	3368
Fomalhaut	E.	92	56	54	3036	91	27	26	3047	89	58	11	3056	88	29	7	3067	
18	Venus	W.	100	18	13	3141	101	45	33	3151	103	12	41	3162	104	39	36	3173
	Spica ♀	W.	48	8	50	2716	49	45	9	2725	51	21	16	2733	52	57	12	2742
	Saturn	E.	30	27	13	2686	28	50	15	2696	27	13	30	2706	25	36	58	2717
	Jupiter	E.	37	1	39	2661	35	24	7	2671	33	46	48	2680	32	9	41	2689
	α Aquilæ	E.	57	47	32	3541	56	27	53	3583	55	9	0	3626	53	50	54	3674
	Fomalhaut	E.	81	7	16	3127	79	39	39	3141	78	12	19	3154	76	45	15	3170
19	Spica ♀	W.	60	54	2	2784	62	28	51	2792	64	3	29	2801	65	37	56	2808
	Antares	W.	15	8	16	2782	16	43	7	2790	18	17	48	2798	19	52	19	2805
	Fomalhaut	E.	69	34	39	3254	68	9	34	3273	66	44	51	3294	65	20	32	3314
	α Pegasi	E.	89	36	22	2921	88	4	30	2931	86	32	50	2939	85	1	20	2948
20	Spica ♀	W.	73	27	36	2849	75	1	1	2856	76	34	17	2864	78	7	22	2872
	Antares	W.	27	42	28	2844	29	15	59	2851	30	49	21	2859	32	22	33	2866
	Fomalhaut	E.	58	25	28	3439	57	3	56	3468	55	42	56	3499	54	22	31	3533
	α Pegasi	E.	77	26	49	2996	75	56	31	3006	74	26	25	3016	72	56	32	3026
21	Spica ♀	W.	85	50	23	2909	87	22	31	2916	88	54	30	2923	90	26	20	2930
	Antares	W.	40	6	10	2903	41	38	25	2910	43	10	31	2917	44	42	28	2924
	Fomalhaut	E.	47	50	26	3738	46	34	19	3790	45	19	6	3844	44	4	49	3905
	α Pegasi	E.	65	30	25	3082	64	1	54	3093	62	33	36	3106	61	5	34	3119
22	Antares	W.	52	20	4	2958	53	51	10	2964	55	22	8	2970	56	52	58	2977
	Saturn	W.	19	54	39	2945	21	26	1	2950	22	57	17	2955	24	28	26	2960
	α Pegasi	E.	53	49	27	3190	52	23	6	3207	50	57	5	3224	49	31	24	3242
	α Arietis	E.	95	33	16	2973	94	2	29	2979	92	31	50	2985	91	1	18	2992
23	Antares	W.	64	25	15	3006	65	55	21	3011	67	25	20	3016	68	55	13	3022
	Saturn	W.	32	2	34	2985	33	33	5	2992	35	3	28	2996	36	33	46	3001

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Midnight.	P. L. of diff.	XV ^h .	P. L. of diff.	XVIII ^h .	P. L. of diff.	XXI ^h .	P. L. of diff.
			° ' "		° ' "		° ' "		° ' "	
14	Saturn	E.	77 19 52	2383	75 35 53	2395	73 52 11	2407	72 8 46	2418
	Jupiter	E.	84 7 53	2364	82 23 26	2376	80 39 17	2387	78 55 23	2399
15	SUN	W.	103 44 34	2813	105 18 45	2825	106 52 40	2837	108 26 20	2849
	Venus	W.	70 23 42	2913	71 55 44	2924	73 27 32	2937	74 59 4	2950
	Regulus	W.	69 16 39	2506	70 57 44	2517	72 38 33	2528	74 19 8	2540
	Antares	E.	30 40 39	2499	28 59 24	2510	27 18 25	2521	25 37 41	2533
	Saturn	E.	63 35 45	2475	61 53 57	2487	60 12 25	2498	58 31 9	2509
	Jupiter	E.	70 20 3	2456	68 37 48	2467	66 55 48	2477	65 14 3	2489
α Aquilæ	E.	86 13 30	3056	84 44 26	3070	83 15 40	3086	81 47 13	3101	
16	SUN	W.	116 10 49	2908	117 42 58	2919	119 14 53	2930	120 46 34	2942
	Venus	W.	82 32 58	3009	84 3 0	3020	85 32 48	3031	87 2 22	3043
	Regulus	W.	82 38 12	2593	84 17 17	2603	85 56 8	2614	87 34 44	2624
	Saturn	E.	50 8 39	2564	48 28 54	2574	46 49 23	2585	45 10 7	2596
	Jupiter	E.	56 49 10	2543	55 8 56	2553	53 28 57	2564	51 49 12	2573
	α Aquilæ	E.	74 30 5	3194	73 3 49	3215	71 37 57	3228	70 12 33	3261
17	SUN	W.	128 21 28	2994	129 51 48	3005	131 21 54	3017	132 51 46	3027
	Venus	W.	94 26 44	3097	95 54 57	3109	97 22 55	3119	98 50 41	3131
	Spica ♀	W.	41 41 36	2681	43 18 42	2689	44 55 37	2698	46 32 19	2707
	Saturn	E.	36 57 20	2646	35 19 28	2657	33 41 50	2666	32 4 25	2676
	Jupiter	E.	43 33 54	2624	41 55 30	2633	40 17 20	2643	38 39 23	2652
	α Aquilæ	E.	63 12 53	3400	61 50 36	3431	60 28 55	3466	59 7 53	3503
Fomalhaut	E.	87 0 17	3078	85 31 40	3089	84 3 17	3101	82 35 9	3114	
18	Venus	W.	106 [*] 6 18	3183	107 32 48	3193	108 59 6	3203	110 25 13	3213
	Spica ♀	W.	54 32 56	2780	56 8 29	2789	57 43 51	2767	59 19 2	2775
	Saturn	E.	24 0 40	2726	22 24 35	2736	20 48 43	2747	19 13 6	2758
	Jupiter	E.	30 32 46	2698	28 56 3	2707	27 19 32	2715	25 43 12	2724
	α Aquilæ	E.	52 33 39	3725	51 17 18	3778	50 1 53	3837	48 47 29	3900
	Fomalhaut	E.	75 18 30	3184	73 52 2	3201	72 25 54	3219	71 0 7	3235
19	Spica ♀	W.	67 12 13	2817	68 46 19	2825	70 20 15	2832	71 54 1	2841
	Antares	W.	21 26 41	2812	23 0 53	2820	24 34 55	2828	26 8 46	2835
	Fomalhaut	E.	63 56 37	3337	62 33 8	3360	61 10 6	3385	59 47 32	3411
	α Pegasi	E.	83 30 2	2958	81 58 56	2967	80 28 2	2976	78 57 19	2986
20	Spica ♀	W.	79 40 17	2879	81 13 3	2887	82 45 39	2894	84 18 6	2901
	Antares	W.	33 55 36	2874	35 28 28	2880	37 1 12	2889	38 33 45	2895
	Fomalhaut	E.	53 2 43	3568	51 43 34	3607	50 25 7	3647	49 7 23	3691
	α Pegasi	E.	71 26 52	3037	69 57 25	3048	68 28 11	3059	66 59 11	3070
21	Spica ♀	W.	91 58 1	2936	93 29 34	2944	95 1 23	2950	96 32 12	2958
	Antares	W.	46 14 17	2931	47 45 57	2938	49 1 10	2944	50 48 50	2951
	Fomalhaut	E.	42 51 34	3970	41 39 25	4042	40 1 10	4110	39 18 45	4208
	α Pegasi	E.	59 37 48	3132	58 10 17	3146	56 5 10	3160	55 16 6	3175
22	Antares	W.	58 23 40	2982	59 54 15	2989	61 25 10	2994	62 55 2	3000
	Saturn	W.	25 59 29	2966	27 1 10	2971	28 32 10	2976	29 31 58	2981
	α Pegasi	E.	48 6 4	3260	46 1 10	3265	44 32 10	3270	42 52 23	3325
	α Arietis	E.	89 30 55	2998	87 1 10	3003	85 1 10	3008	83 0 29	3015
23	Antares	W.	70 24 59	3026	71 45 10	3031	73 1 10	3036	74 3 43	3040
	Saturn	W.	38 3 58	3006	39 1 10	3011	40 31 10	3016	41 3 59	3018

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		LUNAR DISTANCES.								
			Noon.	P. L. of diff.	III ^h .	P. L. of diff.	VI ^h .	P. L. of diff.	IX ^h .	P. L. of diff.	
23	Jupiter	W.	25 0 56	2962	27 11 57	2967	28 42 51	2972	30 13 39	2977	
	α Pegasi	E.	42 28 41	3350	41 5 27	3378	39 42 45	3406	38 20 35	3438	
	α Arietis	E.	83 30 35	3021	82 0 48	3026	80 31 8	3032	79 1 35	3037	
24	Antares	W.	76 23 6	3043	77 52 25	3048	79 21 38	3052	80 50 47	3055	
	Saturn	W.	44 3 49	3022	45 33 34	3026	47 3 14	3030	48 32 50	3034	
	Jupiter	W.	37 46 7	3000	39 16 20	3004	40 46 28	3008	42 16 31	3011	
	α Arietis	E.	71 35 21	3061	70 6 23	3065	68 37 31	3069	67 8 44	3074	
	Aldebaran	E.	104 7 43	3101	102 39 35	3104	101 11 30	3108	99 43 30	3110	
25	Antares	W.	88 15 32	3069	89 44 19	3071	91 13 4	3078	92 41 47	3074	
	Saturn	W.	55 59 49	3047	57 29 4	3049	58 58 16	3051	60 27 26	3052	
	Jupiter	W.	49 45 47	3026	51 15 28	3027	52 45 7	3029	54 14 44	3031	
	α Arietis	E.	59 45 56	3090	58 17 34	3092	56 49 15	3096	55 21 9	2097	
	Aldebaran	E.	92 24 20	3123	90 56 38	3125	89 28 59	3127	88 1 22	3129	
26	Saturn	W.	67 52 58	3054	69 22 4	3055	70 51 9	3053	72 20 16	3052	
	Jupiter	W.	61 42 27	3033	63 11 59	3033	64 41 31	3033	66 11 3	3031	
	α Arietis	E.	48 0 17	3105	46 32 14	3107	45 4 13	3107	43 36 12	3100	
	Aldebaran	E.	80 43 39	3133	79 16 9	3133	77 48 39	3133	76 21 9	3133	
	Sun	E.	135 28 41	3442	134 7 12	3441	132 45 42	3440	131 24 11	3439	
	27	Saturn	W.	79 46 20	3042	81 15 41	3038	82 45 7	3034	84 14 38	3030
Jupiter		W.	73 39 13	3020	75 9 3	3018	76 38 54	3014	78 8 50	3010	
α Aquilæ		W.	61 15 59	3807	62 30 54	3784	63 46 13	3761	65 1 56	3741	
α Arietis		E.	36 16 17	3110	34 48 19	3110	33 20 21	3111	31 52 24	3110	
Aldebaran		E.	69 3 25	3125	67 35 46	3124	66 3 6	3122	64 40 23	3119	
SUN		E.	124 36 8	3428	123 14 23	3423	121 52 33	3419	120 30 38	3415	
28	Saturn	W.	91 43 36	3003	93 13 45	2997	94 44 2	2989	96 14 28	2982	
	Jupiter	W.	85 39 55	2983	87 10 29	2976	88 41 12	2970	90 12 5	2962	
	α Aquilæ	W.	71 25 42	3647	72 43 26	3631	74 1 27	3614	75 19 46	3598	
	Fomalhaut	W.	46 49 42	3853	48 3 50	3808	49 18 44	3767	50 34 21	3727	
	Aldebaran	E.	57 20 55	3102	55 52 49	3099	54 24 38	3096	52 56 23	3091	
	SUN	E.	113 39 39	3336	112 17 7	3379	110 54 26	3371	109 31 36	3363	
29	Jupiter	W.	97 48 47	2920	99 20 41	2909	100 52 49	2899	102 25 9	2888	
	α Aquilæ	W.	81 55 30	3525	83 15 26	3511	84 35 38	3498	85 56 4	3486	
	Fomalhaut	W.	57 2 14	3557	58 21 35	3528	59 41 28	3500	61 1 52	3472	
	α Pegasi	W.	34 9 46	3444	35 31 13	3399	36 53 31	3358	38 16 36	3319	
	Aldebaran	E.	45 33 49	3070	44 5 3	3066	42 36 12	3063	41 7 17	3060	
	SUN	E.	102 34 57	3315	101 11 3	3304	99 46 56	3293	98 22 36	3282	
30	α Aquilæ	W.	92 41 46	3424	94 3 35	3414	95 25 36	3402	96 47 50	3392	
	Fomalhaut	W.	67 51 14	3348	69 14 30	3325	70 38 13	3302	72 2 23	3280	
	α Pegasi	W.	45 22 18	3158	46 49 17	3131	48 16 49	3104	49 44 54	3078	
	Aldebaran	E.	33 42 8	3057	32 13 1	3061	30 44 3	3067	29 15 13	3076	
	SUN	E.	91 17 21	3215	89 51 30	3201	88 25 22	3186	86 58 56	3172	
31	Fomalhaut	W.	79 9 29	3174	80 36 9	3155	82 3 12	3134	83 30 40	3115	
	α Pegasi	W.	57 13 2	2956	58 44 10	2934	60 15 46	2911	61 47 31	2889	
	Aldebaran	E.	21 55 44	3206	20 29 42	3265	19 4 49	3340	17 41 24	3446	
	SUN	E.	79 42 7	3090	78 13 45	3072	76 45 1	3055	75 15 56	3036	

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.			P. L. of diff.	XV ^b .			P. L. of diff.	XVIII ^b .			P. L. of diff.	XXI ^b .			P. L. of diff.
		o	i	u		o	i	u		o	i	u		o	i	u	
23	Jupiter W.	31	44	20	2982	38	14	55	2986	34	45	24	2991	36	15	48	2996
	α Pegasi E.	36	59	1	3472	35	38	6	3512	34	17	55	3555	32	58	31	3602
	α Arietis E.	77	32	8	3042	76	2	47	3047	74	33	32	3082	73	4	24	3056
24	Antares W.	82	19	52	3059	83	48	52	3061	85	17	49	3064	86	46	42	3067
	Saturn W.	50	2	21	3037	51	31	48	3039	53	1	12	3043	54	30	32	3045
	Jupiter W.	43	46	30	3014	45	16	25	3018	46	46	15	3020	48	16	3	3023
	α Arietis E.	65	40	2	3077	64	11	24	3081	62	42	51	3083	61	14	21	3087
	Aldebaran E.	98	15	33	3114	96	47	40	3117	95	19	51	3119	93	52	4	3121
25	Antares W.	94	10	28	3075	95	39	8	3076	97	7	47	3077	98	36	35	3077
	Saturn W.	61	56	35	3053	63	25	42	3054	64	54	48	3055	66	23	53	3055
	Jupiter W.	55	44	19	3032	57	13	52	3032	58	43	25	3034	60	12	56	3034
	α Arietis E.	53	52	47	3099	52	24	36	3101	50	56	28	3103	49	28	22	3104
	Aldebaran E.	86	33	47	3129	85	6	13	3131	83	38	41	3132	82	11	10	3133
26	Saturn W.	73	49	24	3051	75	18	34	3048	76	47	47	3047	78	17	2	3044
	Jupiter W.	67	40	37	3030	69	10	13	3028	70	39	51	3026	72	9	32	3024
	α Arietis E.	42	8	12	3109	40	40	13	3109	39	12	14	3109	37	44	15	3110
	Aldebaran E.	74	53	39	3131	73	26	7	3130	71	58	34	3129	70	31	0	3128
	SUN E.	130	2	39	3438	128	41	6	3435	127	19	29	3433	125	57	50	3431
27	Saturn W.	85	44	13	3026	87	13	54	3021	88	43	41	3015	90	13	35	3009
	Jupiter W.	79	38	51	3006	81	8	57	3000	82	39	10	2998	84	9	29	2989
	α Aquilæ W.	66	18	0	3721	67	34	25	3701	68	51	11	3682	70	8	17	3664
	α Arietis E.	30	24	27	3111	28	56	31	3114	27	28	38	3115	26	0	46	3118
	Aldebaran E.	63	12	37	3116	61	44	47	3114	60	16	54	3110	58	48	57	3106
	SUN E.	119	8	39	3410	117	46	34	3404	116	24	22	3399	115	2	4	3393
28	Saturn W.	97	45	3	2975	99	15	47	2966	100	46	42	2957	102	17	49	2949
	Jupiter W.	91	43	3	2954	93	14	13	2946	94	45	33	2938	96	17	4	2928
	α Aquilæ W.	76	38	22	3583	77	57	15	3568	79	16	24	3554	80	35	49	3539
	Fomalhaut W.	51	50	40	3689	53	7	39	3654	54	25	15	3621	55	43	27	3588
	Aldebaran E.	51	28	2	3087	49	59	37	3083	48	31	6	3078	47	2	30	3074
	SUN E.	108	8	37	3354	106	45	28	3345	105	22	9	3335	103	58	38	3326
29	Jupiter W.	103	57	43	2877	105	30	32	2866	107	3	35	2853	108	36	54	2841
	α Aquilæ W.	87	16	44	3472	88	37	39	3460	89	58	48	3448	91	20	10	3436
	Fomalhaut W.	62	22	47	3446	63	44	11	3421	65	6	4	3396	66	28	25	3372
	α Pegasi W.	39	40	25	3283	41	4	56	3249	42	30	7	3218	43	55	55	3188
	Aldebaran E.	39	38	19	3057	38	9	17	3056	36	40	13	3055	35	11	8	3055
	SUN E.	96	58	3	3270	95	33	16	3256	94	8	13	3242	92	42	54	3230
30	α Aquilæ W.	98	10	16	3382	99	32	53	3373	100	55	40	3364	102	18	38	3355
	Fomalhaut W.	73	26	57	3258	74	51	58	3237	76	17	23	3215	77	43	14	3195
	α Pegasi W.	51	13	31	3053	52	42	38	3028	54	12	16	3003				2980
	Aldebaran E.	27	46	34	3089	26	18	11	3106	24	50	9	3132				
	SUN E.	85	32	13	3156	84	5	11	3139	82	37	49	3124				
31	Fomalhaut W.	84	58	31	3096	86	26	45	3078	87	55	21	3051				
	α Pegasi W.	63	20	24	2866	64	53	26	2844	66	26	57	2827				
	Aldebaran E.	16	19	59	3588	15	1	11	3785	13	45	53					
	SUN E.	73	46	28	3019	72	16	39	3000	70	46						

CONFIGURATIONS OF THE SATELLITES OF JUPITER,

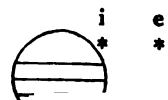
At 11^h 30^m, MEAN TIME.

Day of the Month.	<i>West.</i>				<i>East.</i>			
1	2. ○			1. ○	4.	3.		
2	4. ○		.2	○	.1	3.		
3			4.	1. 3.	○	.2		
4		4.	3.		○	1. 2.		
5		4.	.3	2. .1	○			
6		.4		.3 2.	○	1.		
7		.4		.1	○	.3 2.		
8	2. ○		.4		○		3.	○ 1.
9			.4	.2	○	.1	3.	
10				1. 2. 3.	○	.2		
11			3.		○	.1 2. 4.		
12			.3	2. .1	○		.4	
13				.3 2.	○	1.		.4
14				.1	○	.3 .2		.4
15					○	1. 2.	.3	4.
16	.1 ●		.2		○		3.	4.
17				1.	○	.2	4.	○ 3.
18			3.		○	.1 4.	2.	
19			.3	1. 2. 4.	○			
20			4.	.3 2.	○	1.		
21		4.		.1	○	.3 .2		
22		4.			○	1. 2.	.3	
23		.4		2.	○	.1	3.	
24		.4			1. ○	3.		● .2
25		.4	3.		○	.1	2.	
26		.3	.4	1. 2.	○			
27			.3 2.		○	1.		● .4
28			.1		○	.3 .2	.4	
29					○	1. 2.	.3	.4
30			2.	.1	○		3.	.4
31	1. ○				○	.3	3.	4.

This Table represents, at 11^h 30^m after *Mean Noon* of each day of the month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page; the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the numeral. A white circle (○) at the left or right hand of the page, denotes that the Satellite placed by the side of it is on the disc of Jupiter, and a black circle (●) that it is either *behind* the disc, or in the shadow, of Jupiter.

ECLIPSES OF THE SATELLITES OF JUPITER.

SATELLITE.	Day of the Month.	Mean Time.	Sidereal Time.	PHASE as seen in an inverting Telescope.
I.	2	6 ^h 9 ^m 58 ^s ·1	12 51 ^m 26 ^s ·2	Im.
	4	0 38 34·9	7 27 1·7	Im.
	5	19 7 17·8	2 2 43·2	Im.
	7*	13 35 53·1	20 38 17·2	Im.
	12	23 16 37·4	6 40 19·7	Em.
	14	17 45 15·6	1 15 56·6	Em.
	16*	12 14 1·9	19 51 41·6	Em.
	18	6 42 43·2	14 27 21·6	Em.
	20	1 11 30·6	9 3 7·7	Em.
	21	19 40 10·7	3 38 46·4	Em.
	23†	14 8 58·5	22 14 33·0	Em.
	25†	8 37 41·5	16 50 14·7	Em.
	27	3 6 30·8	11 26 2·6	Em.
	28	21 35 12·4	6 1 43·0	Em.
30	16 4 1·7	0 37 30·9	Em.	
II.	3	3 20 6·6	10 5 3·3	Im.
	6	16 37 11·9	23 36 9·3	Im.
	13	21 58 37·1	5 26 3·1	Em.
	17*	11 15 56·7	18 57 23·3	Em.
	21	0 33 17·6	8 28 44·9	Em.
	24†	13 50 42·4	22 0 10·4	Em.
	28	3 8 9·1	11 31 37·8	Em.
	31	16 25 39·7	1 3 9·1	Em.
III.	6	17 31 17·5	0 30 23·7	Im.
	14	0 48 4·2	8 15 58·1	Em.
	21	4 48 52·4	12 45 1·7	Em.
	28†	8 49 14·9	17 13 39·6	Em.
IV.	10	19 12 0·6	2 27 9·6	Em.
	27*	9 54 50·7	18 15 29·7	Im.
	27*	13 21 43·6	21 42 56·5	Em.



APPROXIMATE SIDEREAL TIMES
OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER,
AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.			TRANSITS OF SATELLITES.			TRANSITS OF SHADOWS.		
	Immersion.	Emersion.		Ingress.	Egress.		Ingress.	Egress.	
	d h m	d h m		d h m	d h m		d h m	d h m	
I.	In the Shadow.	2 15 20		1 ⁺ 15 44	1* 18 4		1 ⁺ 15 32	1* 17 50	
		4 9 58		3 10 17	3 12 36		3 10 7	3 12 26	
		5 4 26		4 4 50	5 7 9		4 4 42	5 7 1	
		7 22 59		6 23 28	6 1 42		6 23 18	6 1 37	
		9* 17 32		8* 17 56	8* 20 15		8* 17 54	8* 20 12	
		11 12 6		10 12 29	10 14 48		10 12 29	10 14 48	
				11 7 1	12 9 21		11 7 4	12 9 24	
				13 1 34	13 3 53		13 1 40	13 3 59	
				15* 20 7	15 ⁺ 22 26		15* 20 15	15 ⁺ 22 35	
		In the Shadow.		17 14 40	17* 16 59		17 14 51	17* 17 10	
				19 9 13	19 11 32		19 9 27	19 11 46	
				20 3 46	20 6 5		20 4 2	20 6 21	
				22 ⁺ 22 19	22 0 38		22 ⁺ 22 36	22 0 57	
				24 ⁺ 16 52	24* 19 11		24* 17 13	24* 19 32	
				26 11 25	26 13 44		26 11 49	26 14 8	
			27 5 58	27 8 17		27 6 24	28 8 44		
			29 0 31	29 2 50		29 1 0	29 3 19		
			31* 19 4	31* 21 23		31* 19 36	31 ⁺ 21 55		
II.	In the Shadow.	3 13 16		1 ⁺ 15 43	1* 18 37		1 15 18	1* 18 12	
		6 2 37		4 5 5	5 7 59		4 4 50	5 7 44	
		10 ⁺ 13 3		6* 18 28	6* 21 22		6* 18 23	6* 21 17	
		13 2 24		12 7 50	12 10 43		12 7 56	12 10 49	
		17 15 45	In	15* 21 12	15 0 6		15* 21 29	15 0 23	
		20 5 6	the	19 10 34	19 13 28		19 11 1	19 13 55	
		24* 18 27	Shadow.	22 23 57	22 2 51		22 0 34	22 3 28	
		27 7 48		26 13 19	26 ⁺ 16 13		26 14 7	26 ⁺ 17 1	
	31* 21 10		29 2 43	29 5 36		29 3 40	29 6 34		
III.	In the Shadow.	6 4 12		3 11 2	3 14 30		3 10 22	3 13 48	
		13 4 29		10 14 46	10* 18 14		10 14 49	10* 18 16	
		21 8 15	In the	17* 18 31	17 ⁺ 21 58		17* 19 16	17 ⁺ 22 44	
		28 12 1	Shadow.	24 ⁺ 22 16	24 1 44		24 23 44	24 3 12	
				31 2 4	31 5 32		31 4 12	31 7 41	
IV.	10 ⁺ 22 50	In the Shadow.	2 ⁺ 16 20	2* 19 55		2 14 40	2* 18 4		
	27 14 12	27* 17 47	18 7 43	19 11 19		19 9 50	19 13 22		

Day of the Month.	For correcting the Places of the Fixed Stars.				Mean Time		Mean Equinoctial Time, adding 0 ^h .567809.	From Mean		
	At Mean Midnight,				of			Day of the Year.	Fraction of the Year.	
	Logarithm of				Transit					
A	B	C	D	of the		Days.				
				First Point of						
				Aries.						
				h m s						
1	+0.4951	-1.3026	+9.9152	-0.4639	17	20	38.31	100	181	.496
2	0.5357	1.3013	9.9171	0.4637	17	16	42.40	101	182	.498
3	0.5726	1.2999	9.9190	0.4636	17	12	46.49	102	183	.501
4	+0.6065	-1.2984	+9.9209	-0.4635	17	8	50.58	103	184	.504
5	0.6379	1.2967	9.9227	0.4635	17	4	54.66	104	185	.507
6	0.6671	1.2949	9.9246	0.4636	17	0	58.75	105	186	.509
7	+0.6943	-1.2930	+9.9265	-0.4637	16	57	2.84	106	187	.512
8	0.7198	1.2909	9.9283	0.4640	16	53	6.93	107	188	.515
9	0.7438	1.2887	9.9301	0.4643	16	49	11.02	108	189	.517
10	+0.7664	-1.2864	+9.9319	-0.4647	16	45	15.10	109	190	.520
11	0.7878	1.2840	9.9337	0.4652	16	41	19.19	110	191	.523
12	0.8080	1.2814	9.9354	0.4657	16	37	23.28	111	192	.526
13	+0.8272	-1.2787	+9.9372	-0.4663	16	33	27.37	112	193	.528
14	0.8455	1.2758	9.9389	0.4670	16	29	31.46	113	194	.531
15	0.8630	1.2728	9.9406	0.4677	16	25	35.55	114	195	.534
16	+0.8797	-1.2697	+9.9423	-0.4685	16	21	39.63	115	196	.537
17	0.8956	1.2664	9.9440	0.4694	16	17	43.72	116	197	.539
18	0.9108	1.2630	9.9457	0.4703	16	13	47.81	117	198	.542
19	+0.9255	-1.2594	+9.9473	-0.4712	16	9	51.90	118	199	.545
20	0.9395	1.2557	9.9490	0.4722	16	5	55.99	119	200	.548
21	0.9530	1.2518	9.9506	0.4733	16	2	0.08	120	201	.550
22	+0.9659	-1.2478	+9.9522	-0.4744	15	58	4.17	121	202	.553
23	0.9784	1.2436	9.9538	0.4755	15	54	8.26	122	203	.556
24	0.9904	1.2392	9.9553	0.4767	15	50	12.34	123	204	.559
25	+1.0019	-1.2346	+9.9569	-0.4779	15	46	16.43	124	205	.561
26	1.0131	1.2299	9.9584	0.4792	15	42	20.52	125	206	.564
27	1.0238	1.2250	9.9599	0.4805	15	38	24.61	126	207	.567
28	+1.0342	-1.2200	+9.9614	-0.4817	15	34	28.70	127	208	.569
29	1.0442	1.2148	9.9629	0.4831	15	30	32.79	128	209	.572
30	1.0539	1.2093	9.9643	0.4845	15	26	36.88	129	210	.575
31	1.0633	1.2037	9.9658	0.4859	15	22	40.97	130	211	.578
32	+1.0723	-1.1979	+9.9671	-0.4873	15	18	45.06	131	212	.580

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, to be added to		Diff. for 1 hour.
		Apparent Right Ascension.	Diff. for 1 hour.	Apparent Declination.	Diff. for 1 hour.		subt. from Apparent Time.		
Mon.	1	h m s 8 44 45·29	9·707	N. 18 5 13·9	38·03	m s 1 6·60	m s 6 0·30	s 0·150	
Tues.	2	8 48 38·26	9·682	17 50 1·3	38·75	1 6·51	5 56·71	0·174	
Wed.	3	8 52 30·63	9·657	17 34 31·2	39·47	1 6·42	5 52·53	0·198	
Thur.	4	8 56 22·41	9·633	17 18 43·9	40·18	1 6·33	5 47·77	0·223	
Frid.	5	9 0 13·60	9·608	17 2 39·6	40·87	1 6·25	5 42·42	0·248	
Sat.	6	9 4 4·19	9·583	16 46 18·8	41·55	1 6·16	5 36·47	0·273	
Sun.	7	9 7 54·18	9·558	16 29 41·7	42·21	1 6·08	5 29·92	0·297	
Mon.	8	9 11 43·58	9·534	16 12 48·6	42·36	1 5·99	5 22·78	0·322	
Tues.	9	9 15 32·39	9·509	15 55 39·9	43·50	1 5·91	5 15·06	0·346	
Wed.	10	9 19 20·61	9·484	15 38 15·8	44·12	1 5·83	5 6·75	0·370	
Thur.	11	9 23 8·24	9·460	15 20 36·9	44·73	1 5·75	4 57·86	0·395	
Frid.	12	9 26 55·29	9·436	15 2 43·3	45·33	1 5·67	4 48·38	0·419	
Sat.	13	9 30 41·76	9·412	14 44 35·3	45·91	1 5·59	4 38·32	0·443	
Sun.	14	9 34 27·66	9·389	14 26 13·4	46·48	1 5·51	4 27·69	0·466	
Mon.	15	9 38 13·00	9·366	14 7 37·8	47·05	1 5·43	4 16·51	0·489	
Tues.	16	9 41 57·79	9·343	13 48 48·7	47·59	1 5·35	4 4·77	0·511	
Wed.	17	9 45 42·04	9·321	13 29 46·6	48·12	1 5·28	3 52·50	0·533	
Thur.	18	9 49 25·76	9·300	13 10 31·7	48·64	1 5·21	3 39·71	0·554	
Frid.	19	9 53 8·98	9·280	12 51 4·3	49·15	1 5·14	3 26·41	0·575	
Sat.	20	9 56 51·71	9·260	12 31 24·7	49·65	1 5·07	3 12·61	0·595	
Sun.	21	10 0 33·95	9·240	12 11 33·1	50·13	1 5·00	2 58·34	0·614	
Mon.	22	10 4 15·72	9·222	11 51 30·0	50·60	1 4·93	2 43·60	0·633	
Tues.	23	10 7 57·05	9·204	11 31 15·5	51·06	1 4·86	2 28·41	0·651	
Wed.	24	10 11 37·94	9·187	11 10 50·0	51·51	1 4·80	2 12·79	0·668	
Thur.	25	10 15 18·43	9·170	10 50 13·7	51·94	1 4·74	1 56·77	0·684	
Frid.	26	10 18 58·52	9·154	10 29 27·1	52·37	1 4·68	1 40·35	0·700	
Sat.	27	10 22 38·22	9·139	10 8 30·3	52·78	1 4·62	1 23·54	0·714	
Sun.	28	10 26 17·56	9·123	9 47 23·7	53·17	1 4·56	1 6·38	0·728	
Mon.	29	10 29 56·56	9·111	9 26 7·6	53·55	1 4·51	0 48·87	0·742	
Tues.	30	10 33 35·23	9·097	9 4 42·3	53·92	1 4·46	0 31·03	0·756	
Wed.	31	10 37 13·57	9·085	8 43 8·2	54·28	1 4·41	0 12·88	0·769	
Thur.	32	10 40 51·62		N. 8 21 25·5		1 4·37	0 5·58		

* Mean Time of the Semidiameter passing may be found by subtracting 0^m18 from the Sidereal Time.

AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S			Equation of Time, to be <i>subt. from</i> added to <i>Mean Time.</i>	Sidereal Time.
		<i>Apparent</i> Right Ascension.	<i>Apparent</i> Declination.	Semidiam.*		
Mon.	1	h m s 8 44 44.32	N. 18° 5' 17".7	15 47' 0"	m s 6 0.31	h m s 8 38 44.01
Tues.	2	8 48 37.30	17 50 5.1	15 47' 2"	5 56.73	8 42 40.57
Wed.	3	8 52 29.68	17 34 35.0	15 47' 3"	5 52.55	8 46 37.13
Thur.	4	8 56 21.47	17 18 47.7	15 47' 5"	5 47.79	8 50 33.68
Frid.	5	9 0 12.68	17 2 43.5	15 47' 6"	5 42.44	8 54 30.24
Sat.	6	9 4 3.29	16 46 22.6	15 47' 8"	5 36.50	8 58 26.79
Sun.	7	9 7 53.30	16 29 45.5	15 47' 9"	5 29.95	9 2 23.35
Mon.	8	9 11 42.72	16 12 52.4	15 48' 1"	5 23.81	9 6 19.91
Tues.	9	9 15 31.55	15 55 43.6	15 48' 2"	5 15.09	9 10 16.46
Wed.	10	9 19 19.80	15 38 19.6	15 48' 4"	5 6.78	9 14 13.02
Thur.	11	9 23 7.46	15 20 40.5	15 48' 5"	4 57.89	9 18 9.57
Frid.	12	9 26 54.54	15 2 46.9	15 48' 7"	4 48.41	9 22 6.13
Sat.	13	9 30 41.03	14 44 38.9	15 48' 8"	4 38.35	9 26 2.68
Sun.	14	9 34 26.96	14 26 16.8	15 49' 0"	4 27.72	9 29 59.24
Mon.	15	9 38 12.33	14 7 41.1	15 49' 2"	4 16.54	9 33 55.79
Tues.	16	9 41 57.15	13 48 51.9	15 49' 4"	4 4.80	9 37 52.35
Wed.	17	9 45 41.44	13 29 49.7	15 49' 6"	3 52.53	9 41 48.90
Thur.	18	9 49 25.20	13 10 34.6	15 49' 8"	3 39.74	9 45 45.46
Frid.	19	9 53 8.45	12 51 7.1	15 50' 0"	3 26.44	9 49 42.01
Sat.	20	9 56 51.21	12 31 27.3	15 50' 2"	3 12.64	9 53 38.57
Sun.	21	10 0 33.49	12 11 35.6	15 50' 4"	2 58.37	9 57 35.12
Mon.	22	10 4 15.30	11 51 32.3	15 50' 6"	2 43.63	10 1 31.68
Tues.	23	10 7 56.67	11 31 17.6	15 50' 8"	2 28.44	10 5 28.23
Wed.	24	10 11 37.60	11 10 51.9	15 51' 0"	2 12.81	10 9 24.79
Thur.	25	10 15 18.13	10 50 15.4		1 56.79	10 13 21.34
Frid.	26	10 18 58.26	10 29 28.2		1 40.37	10 17 17.89
Sat.	27	10 22 38.01	10 8 31.2		1 23.56	10 21 14.45
Sun.	28	10 26 17.39	9 47 24.2		1 7.39	10 25 11.00
Mon.	29	10 29 56.44	9 26 38.2		1 8.88	10 29 7.56
Tues.	30	10 33 35.15	9 5 52.2		1 2.34	10 33 4.11
Wed.	31	10 37 13.54	8 45 5.2		1 1.22	10 37 0.66
Thur.	32	10 40 51.64	N. 6° 55' 11.2		1 0.00	10 40 57.22

* The Semidiameter for *Apparent*

at Mean Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S			
	Longitude.	Latitude.		Semidiameter.		Horizontal Parallax.	
	<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>
1	128° 45' 5" 8	N. 0° 28'	0.0063304	15° 32' 8"	15° 40' 3"	57' 3" 0	57' 30" 7
2	129 42 33 1	0 16	0 0062798	15 48 0	15 55 8	57 59 0	58 27 6
3	130 40 1 5	N. 0° 04'	0 0062130	16 3 3	16 10 9	58 55 8	59 22 8
4	131 37 31 1	S. 0° 10'	0 0061509	16 17 8	16 24 0	59 48 1	60 10 9
5	132 35 1 9	0 23	0 0060865	16 29 3	16 33 7	60 30 6	60 46 6
6	133 32 33 8	0 37	0 0060198	16 36 9	16 38 9	60 58 5	61 5 8
7	134 30 6 7	0 49	0 0059508	16 39 7	16 39 1	61 8 6	61 6 4
8	135 27 40 7	0 60	0 0058794	16 37 3	16 34 3	60 59 9	60 48 8
9	136 25 15 7	0 67	0 0058058	16 30 3	16 25 4	60 34 1	60 16 0
10	137 22 51 8	0 72	0 0057300	16 19 7	16 13 6	59 55 4	59 32 8
11	138 20 28 8	0 74	0 0056521	16 7 1	16 0 2	59 8 8	58 43 8
12	139 18 6 7	0 73	0 0055723	15 53 3	15 46 5	58 18 4	57 53 4
13	140 15 45 5	0 69	0 0054908	15 39 8	15 33 4	57 28 9	57 5 2
14	141 13 25 4	0 63	0 0054076	15 27 2	15 21 5	56 42 7	56 21 8
15	142 11 6 2	0 53	0 0053229	15 16 1	15 11 1	56 2 0	55 48 6
16	143 8 48 1	0 42	0 0052368	15 6 6	15 2 4	55 26 8	55 11 6
17	144 6 31 1	0 30	0 0051495	14 58 7	14 55 3	54 57 9	54 45 4
18	145 4 15 3	0 17	0 0050610	14 52 3	14 49 7	54 34 4	54 24 9
19	146 2 0 6	S. 0° 04'	0 0049715	14 47 5	14 45 6	54 16 8	54 9 9
20	146 59 47 3	N. 0° 08'	0 0048812	14 44 1	14 43 0	54 4 4	54 0 4
21	147 57 35 4	0 18	0 0047900	14 42 3	14 41 9	53 57 8	53 56 2
22	148 55 24 9	0 27	0 0046980	14 41 8	14 42 2	53 56 1	53 57 4
23	149 53 16 0	0 33	0 0046053	14 43 0	14 44 2	54 0 4	54 4 8
24	150 51 8 7	0 35	0 0045117	14 45 9	14 48 0	54 10 9	54 18 7
25	151 49 3 2	0 36	0 0044173	14 50 6	14 53 6	54 28 2	54 39 3
26	152 46 59 4	0 33	0 0043219	14 57 2	15 1 4	54 52 5	55 7 8
27	153 44 57 4	0 26	0 0042254	15 6 1	15 11 2	55 25 0	55 43 8
28	154 42 57 3	0 17	0 0041278	15 16 9	15 23 2	56 4 9	56 27 7
29	155 40 59 2	N. 0° 07'	0 0040290	15 29 8	15 37 0	56 52 2	57 18 4
30	156 39 3 0	S. 0° 06'	0 0039288	15 44 4	15 52 0	57 45 6	58 13 6
31	157 37 8 7	0 19	0 0038273	15 59 7	16 7 3	58 41 7	59 9 7
32	158 35 16 4	S. 0° 34'	0 0037244	16 14 6	16 21 5	59 36 6	60 1 9

MEAN TIME.

THE MOON'S

Day of the Week.	Day of the Month.	Longitude.		Latitude.		Age.	Meridian
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Passage.
		° ' "	° ' "	° ' "	° ' "	d	h m
Mon.	1	61 3 44.2	67 40 44.5	N.4 0 51.7	N.3 35 43.2	24.2	19 58.6
Tues.	2	74 24 8.8	81 14 8.2	3 7 13.1	2 35 36.5	25.2	20 58.0
Wed.	3	88 10 48.5	95 14 4.5	2 1 12.2	1 24 26.0	26.2	21 58.7
Thur.	4	102 23 43.9	109 39 21.6	N.0 45 48.1	N.0 5 54.6	27.2	22 58.8
Frid.	5	117 0 24.2	124 26 5.4	S.0 34 33.1	S.1 14 49.4	28.2	23 56.8
Sat.	6	131 55 32.3	139 27 39.9	1 54 7.0	2 31 37.7	29.2	♄
Sun.	7	147 1 21.7	154 35 24.3	3 6 34.7	3 38 15.1	0.9	0 52.1
Mon.	8	162 8 36.2	169 39 46.4	4 6 1.7	4 29 24.0	1.9	1 45.2
Tues.	9	177 7 51.3	184 31 53.0	4 48 0.8	5 1 36.9	2.9	2 37.0
Wed.	10	191 51 5.3	199 4 49.7	5 10 8.2	5 13 35.5	3.9	3 28.4
Thur.	11	206 12 41.2	213 14 22.5	5 12 7.9	5 5 58.3	4.9	4 20.4
Frid.	12	220 9 48.5	226 58 59.5	4 55 25.2	4 40 49.1	5.9	5 13.6
Sat.	13	233 42 6.4	240 19 23.0	4 22 33.5	4 1 1.2	6.9	6 8.0
Sun.	14	246 51 9.9	253 17 49.3	3 36 37.8	3 9 47.2	7.9	7 2.9
Mon.	15	259 39 46.4	265 57 27.1	2 40 55.1	2 10 24.6	8.9	7 57.5
Tues.	16	272 11 18.4	278 21 44.9	1 38 39.6	S.1 6 3.3	9.9	8 50.3
Wed.	17	284 29 13.0	290 34 5.7	S.0 32 58.7	N.0 0 13.3	10.9	9 40.6
Thur.	18	296 36 45.7	302 37 32.9	N.0 33 11.2	1 5 34.6	11.9	10 28.0
Frid.	19	308 36 46.8	314 34 44.4	1 37 3.2	2 7 19.1	12.9	11 12.6
Sat.	20	320 31 41.8	326 27 54.1	2 36 3.8	3 3 1.5	13.9	11 54.8
Sun.	21	332 23 34.5	338 18 57.5	3 27 55.4	3 50 31.5	14.9	12 35.5
Mon.	22	344 14 16.6	350 9 44.6	4 10 36.7	4 27 59.3	15.9	13 15.4
Tues.	23	356 5 36.8	2 2 8.5	4 42 28.5	4 53 56.0	16.9	13 55.3
Wed.	24	7 59 36.7	13 58 18.7	5 2 13.1	5 7 13.7	17.9	14 36.4
Thur.	25	19 58 34.8	26 0 46.8	5 8 53.3	5 7 7.8	18.9	15 19.4
Frid.	26	32 5 18.2	38 12 34.4	5 1 54.9	4 53 13.4	19.9	16 5.2
Sat.	27	44 23 2.3	50 37 10.3	4 41 3.4	4 25 26.8	20.9	16 54.5
Sun.	28	56 55 26.9	63 18 22.1	4 6 27.8	3 44 11.6	21.9	17 4.4
Mon.	29	69 46 24.8	76 20 2.2	3 18 46.9	2 50 23.8	22.9	17 5.7
Tues.	30	82 59 40.7	89 45 40.8	2 19 16.8	1 35 44.3	23.9	17 3.0
Wed.	31	96 38 19.0	103 37 45.8	N.1 10 8.4	2 32 55.8	24.9	17 3.9
Thur.	32	110 44 2.1	117 56 59.1	S.0 5 21.8	1 11 7.8	25.9	17 3.9

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .
MONDAY 1.				WEDNESDAY 3.			
0	3 52 4 ^h 19 ^m	N.24 18 59 ^o 5 ⁿ	49 ^{''} 50 ^{''}	0	5 51 56 ^h 50 ^m	N.25 28 4 ^o 8 ⁿ	25 ^{''} 58 ^{''}
1	3 54 26 ^h 67 ^m	24 23 56 ^o 5 ⁿ	48 ^{''} 18 ^{''}	1	5 54 31 ^h 69 ^m	25 25 30 ^o 7 ⁿ	27 ^{''} 42 ^{''}
2	3 56 49 ^h 53 ^m	24 28 45 ^o 6 ⁿ	46 ^{''} 83 ^{''}	2	5 57 6 ^h 98 ^m	25 22 46 ^o 2 ⁿ	29 ^{''} 17 ^{''}
3	3 59 12 ^h 77 ^m	24 33 26 ^o 6 ⁿ	45 ^{''} 48 ^{''}	3	5 59 48 ^h 36 ^m	25 19 51 ^o 2 ⁿ	30 ^{''} 88 ^{''}
4	4 1 36 ^h 39 ^m	24 37 59 ^o 5 ⁿ	44 ^{''} 13 ^{''}	4	6 2 17 ^h 82 ^m	25 16 45 ^o 9 ⁿ	32 ^{''} 63 ^{''}
5	4 4 0 ^h 37 ^m	24 42 24 ^o 3 ⁿ	42 ^{''} 75 ^{''}	5	6 4 53 ^h 35 ^m	25 13 30 ^o 1 ⁿ	34 ^{''} 37 ^{''}
6	4 6 24 ^h 73 ^m	24 46 40 ^o 8 ⁿ	41 ^{''} 37 ^{''}	6	6 7 28 ^h 95 ^m	25 10 30 ^o 3 ⁿ	36 ^{''} 12 ^{''}
7	4 8 49 ^h 44 ^m	24 50 49 ^o 0 ⁿ	39 ^{''} 97 ^{''}	7	6 10 4 ^h 61 ^m	25 6 27 ^o 2 ⁿ	37 ^{''} 85 ^{''}
8	4 11 14 ^h 52 ^m	24 54 48 ^o 8 ⁿ	38 ^{''} 55 ^{''}	8	6 12 40 ^h 33 ^m	25 2 40 ^o 1 ⁿ	39 ^{''} 60 ^{''}
9	4 13 39 ^h 96 ^m	24 58 40 ^o 1 ⁿ	37 ^{''} 13 ^{''}	9	6 15 16 ^h 08 ^m	24 58 42 ^o 5 ⁿ	41 ^{''} 33 ^{''}
10	4 16 5 ^h 75 ^m	25 2 22 ^o 9 ⁿ	35 ^{''} 72 ^{''}	10	6 17 51 ^h 87 ^m	24 54 34 ^o 5 ⁿ	43 ^{''} 07 ^{''}
11	4 18 31 ^h 90 ^m	25 5 57 ^o 2 ⁿ	34 ^{''} 25 ^{''}	11	6 20 27 ^h 68 ^m	24 50 16 ^o 1 ⁿ	44 ^{''} 82 ^{''}
12	4 20 58 ^h 38 ^m	25 9 22 ^o 7 ⁿ	32 ^{''} 80 ^{''}	12	6 23 3 ^h 51 ^m	24 45 47 ^o 2 ⁿ	46 ^{''} 55 ^{''}
13	4 23 25 ^h 21 ^m	25 12 39 ^o 5 ⁿ	31 ^{''} 33 ^{''}	13	6 25 39 ^h 36 ^m	24 41 7 ^o 9 ⁿ	48 ^{''} 28 ^{''}
14	4 25 52 ^h 39 ^m	25 15 47 ^o 5 ⁿ	29 ^{''} 85 ^{''}	14	6 28 15 ^h 21 ^m	24 36 18 ^o 2 ⁿ	50 ^{''} 02 ^{''}
15	4 28 19 ^h 89 ^m	25 18 46 ^o 6 ⁿ	28 ^{''} 37 ^{''}	15	6 30 51 ^h 05 ^m	24 31 18 ^o 1 ⁿ	51 ^{''} 77 ^{''}
16	4 30 47 ^h 72 ^m	25 21 36 ^o 8 ⁿ	26 ^{''} 85 ^{''}	16	6 33 26 ^h 88 ^m	24 26 7 ^o 5 ⁿ	53 ^{''} 47 ^{''}
17	4 33 15 ^h 87 ^m	25 24 17 ^o 9 ⁿ	25 ^{''} 35 ^{''}	17	6 36 2 ^h 69 ^m	24 20 46 ^o 7 ⁿ	55 ^{''} 20 ^{''}
18	4 35 44 ^h 35 ^m	25 26 50 ^o 0 ⁿ	23 ^{''} 83 ^{''}	18	6 38 38 ^h 47 ^m	24 15 15 ^o 5 ⁿ	56 ^{''} 93 ^{''}
19	4 38 13 ^h 13 ^m	25 29 13 ^o 0 ⁿ	22 ^{''} 28 ^{''}	19	6 41 14 ^h 22 ^m	24 9 33 ^o 9 ⁿ	58 ^{''} 63 ^{''}
20	4 40 42 ^h 23 ^m	25 31 26 ^o 7 ⁿ	20 ^{''} 75 ^{''}	20	6 43 49 ^h 93 ^m	24 3 42 ^o 1 ⁿ	60 ^{''} 35 ^{''}
21	4 43 11 ^h 62 ^m	25 33 31 ^o 2 ⁿ	19 ^{''} 20 ^{''}	21	6 46 25 ^h 58 ^m	23 57 40 ^o 0 ⁿ	62 ^{''} 05 ^{''}
22	4 45 41 ^h 32 ^m	25 35 26 ^o 4 ⁿ	17 ^{''} 63 ^{''}	22	6 49 1 ^h 18 ^m	23 51 27 ^o 7 ⁿ	63 ^{''} 77 ^{''}
23	4 48 11 ^h 30 ^m	N.25 37 12 ^o 2 ⁿ	16 ^{''} 07 ^{''}	23	6 51 36 ^h 71 ^m	N.23 45 5 ^o 1 ⁿ	65 ^{''} 45 ^{''}
TUESDAY 2.				THURSDAY 4.			
0	4 50 41 ^h 56 ^m	N.25 38 48 ^o 6 ⁿ	14 ^{''} 48 ^{''}	0	6 54 12 ^h 17 ^m	N.23 38 32 ^o 4 ⁿ	67 ^{''} 15 ^{''}
1	4 53 12 ^h 11 ^m	25 40 15 ^o 5 ⁿ	12 ^{''} 90 ^{''}	1	6 56 47 ^h 55 ^m	23 31 49 ^o 5 ⁿ	68 ^{''} 83 ^{''}
2	4 55 42 ^h 93 ^m	25 41 32 ^o 9 ⁿ	11 ^{''} 28 ^{''}	2	6 59 22 ^h 84 ^m	23 24 56 ^o 5 ⁿ	70 ^{''} 50 ^{''}
3	4 58 14 ^h 02 ^m	25 42 40 ^o 6 ⁿ	9 ^{''} 68 ^{''}	3	7 1 58 ^h 04 ^m	23 17 53 ^o 5 ⁿ	72 ^{''} 18 ^{''}
4	5 0 45 ^h 37 ^m	25 43 38 ^o 7 ⁿ	8 ^{''} 07 ^{''}	4	7 4 33 ^h 14 ^m	23 10 40 ^o 4 ⁿ	73 ^{''} 83 ^{''}
5	5 3 16 ^h 97 ^m	25 44 27 ^o 1 ⁿ	6 ^{''} 43 ^{''}	5	7 7 8 ^h 13 ^m	23 3 17 ^o 4 ⁿ	75 ^{''} 50 ^{''}
6	5 5 48 ^h 82 ^m	25 45 5 ^o 7 ⁿ	4 ^{''} 80 ^{''}	6	7 9 43 ^h 02 ^m	22 55 44 ^o 4 ⁿ	77 ^{''} 15 ^{''}
7	5 8 20 ^h 91 ^m	25 45 34 ^o 5 ⁿ	3 ^{''} 17 ^{''}	7	7 12 17 ^h 78 ^m	22 48 1 ^o 5 ⁿ	78 ^{''} 78 ^{''}
8	5 10 53 ^h 24 ^m	25 45 53 ^o 5 ⁿ	1 ^{''} 52 ^{''}	8	7 14 52 ^h 41 ^m	22 40 8 ^o 8 ⁿ	80 ^{''} 40 ^{''}
9	5 13 25 ^h 79 ^m	25 46 2 ^o 6 ⁿ	0 ^{''} 15 ^{''}	9	7 17 26 ^h 92 ^m	22 32 6 ^o 4 ⁿ	82 ^{''} 03 ^{''}
10	5 15 58 ^h 57 ^m	25 46 1 ^o 7 ⁿ	1 ^{''} 80 ^{''}	10	7 20 1 ^h 29 ^m	22 23 54 ^o 2 ⁿ	83 ^{''} 65 ^{''}
11	5 18 31 ^h 56 ^m	25 45 50 ^o 9 ⁿ	3 ^{''} 48 ^{''}	11	7 22 35 ^h 52 ^m	22 15 32 ^o 3 ⁿ	85 ^{''} 25 ^{''}
12	5 21 4 ^h 75 ^m	25 45 30 ^o 0 ⁿ	5 ^{''} 17 ^{''}	12	7 25 9 ^h 60 ^m	22 7 0 ^o 8 ⁿ	86 ^{''} 83 ^{''}
13	5 23 38 ^h 15 ^m	25 44 59 ^o 0 ⁿ	6 ^{''} 82 ^{''}	13	7 27 43 ^h 53 ^m	21 58 19 ^o 8 ⁿ	88 ^{''} 43 ^{''}
14	5 26 11 ^h 74 ^m	25 44 18 ^o 0 ⁿ	8 ^{''} 53 ^{''}	14	7 30 17 ^h 29 ^m	21 49 29 ^o 2 ⁿ	89 ^{''} 98 ^{''}
15	5 28 45 ^h 51 ^m	25 43 26 ^o 8 ⁿ	10 ^{''} 28 ^{''}	15	7 32 50 ^h 90 ^m	21 40 29 ^o 3 ⁿ	91 ^{''} 55 ^{''}
16	5 31 19 ^h 46 ^m	25 42 25 ^o 4 ⁿ	11 ^{''} 93 ^{''}	16	7 35 24 ^h 33 ^m	21 31 20 ^o 0 ⁿ	93 ^{''} 10 ^{''}
17	5 33 53 ^h 58 ^m	25 41 13 ^o 8 ⁿ	13 ^{''} 63 ^{''}	17	7 37 57 ^h 59 ^m	21 22 1 ^o 4 ⁿ	94 ^{''} 63 ^{''}
18	5 36 27 ^h 86 ^m	25 39 52 ^o 0 ⁿ	15 ^{''} 35 ^{''}	18	7 40 30 ^h 67 ^m	21 12 33 ^o 6 ⁿ	96 ^{''} 17 ^{''}
19	5 39 2 ^h 30 ^m	25 38 19 ^o 9 ⁿ	17 ^{''} 07 ^{''}	19	7 43 3 ^h 57 ^m	21 2 56 ^o 6 ⁿ	97 ^{''} 67 ^{''}
20	5 41 36 ^h 88 ^m	25 36 37 ^o 5 ⁿ	18 ^{''} 77 ^{''}	20	7 45 36 ^h 27 ^m	20 53 10 ^o 6 ⁿ	99 ^{''} 17 ^{''}
21	5 44 11 ^h 60 ^m	25 34 44 ^o 9 ⁿ	20 ^{''} 50 ^{''}	21	7 48 8 ^h 79 ^m	20 43 15 ^o 6 ⁿ	100 ^{''} 65 ^{''}
22	5 46 46 ^h 43 ^m	25 32 41 ^o 9 ⁿ	22 ^{''} 38 ^{''}	22	7 50 41 ^h 10 ^m	20 33 11 ^o 7 ⁿ	102 ^{''} 13 ^{''}
23	5 49 21 ^h 42 ^m	25 30 28 ^o 5 ⁿ	23 ^{''} 95 ^{''}	23	7 53 13 ^h 22 ^m	20 22 58 ^o 9 ⁿ	103 ^{''} 58 ^{''}
24	5 51 56 ^h 50 ^m	N.25 28 4 ^o 8 ⁿ		24	7 55 45 ^h 13 ^m	N.20 12 37 ^o 4 ⁿ	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>FRIDAY 5.</i>				<i>SUNDAY 7.</i>			
0	^h 7 ^m 55 ^s 45 ["] 13	N. 20 12 37 ["] 4	105 ["] 03	0	^h 9 ^m 52 ^s 38 ["] 44	N. 9 35 28 ["] 4	154 ["] 47
1	7 58 16 ["] 83	20 2 7 ["] 2	106 ["] 45	1	9 54 58 ["] 72	9 20 1 ["] 6	155 ["] 03
2	8 0 48 ["] 31	19 51 28 ["] 5	107 ["] 88	2	9 57 18 ["] 79	9 4 31 ["] 4	155 ["] 58
3	8 3 19 ["] 58	19 40 41 ["] 2	109 ["] 28	3	9 59 38 ["] 65	8 48 57 ["] 9	156 ["] 10
4	8 5 50 ["] 63	19 29 45 ["] 5	110 ["] 67	4	10 1 58 ["] 30	8 33 21 ["] 3	156 ["] 42
5	8 8 21 ["] 46	19 18 41 ["] 5	112 ["] 03	5	10 4 17 ["] 73	8 17 41 ["] 6	157 ["] 05
6	8 10 52 ["] 06	19 7 29 ["] 3	113 ["] 42	6	10 6 36 ["] 99	8 1 59 ["] 1	157 ["] 55
7	8 13 22 ["] 44	18 56 8 ["] 8	114 ["] 73	7	10 8 56 ["] 04	7 46 13 ["] 8	158 ["] 00
8	8 15 52 ["] 58	18 44 40 ["] 4	116 ["] 07	8	10 11 14 ["] 89	7 30 25 ["] 8	158 ["] 42
9	8 18 22 ["] 49	18 33 4 ["] 0	117 ["] 38	9	10 13 33 ["] 54	7 14 35 ["] 3	158 ["] 03
10	8 20 52 ["] 17	18 21 19 ["] 7	118 ["] 68	10	10 15 52 ["] 01	6 58 42 ["] 3	159 ["] 20
11	8 23 21 ["] 61	18 9 27 ["] 6	119 ["] 97	11	10 18 10 ["] 29	6 42 47 ["] 1	159 ["] 58
12	8 25 50 ["] 81	17 57 27 ["] 8	121 ["] 23	12	10 20 28 ["] 39	6 26 49 ["] 6	159 ["] 92
13	8 28 19 ["] 77	17 45 20 ["] 4	122 ["] 47	13	10 22 46 ["] 31	6 10 50 ["] 1	160 ["] 25
14	8 30 48 ["] 50	17 33 5 ["] 6	123 ["] 70	14	10 25 4 ["] 06	5 54 48 ["] 6	160 ["] 55
15	8 33 16 ["] 98	17 20 43 ["] 4	124 ["] 92	15	10 27 21 ["] 64	5 38 45 ["] 3	160 ["] 55
16	8 35 45 ["] 21	17 8 13 ["] 9	126 ["] 12	16	10 29 39 ["] 05	5 22 40 ["] 2	161 ["] 10
17	8 38 13 ["] 20	16 55 37 ["] 2	127 ["] 28	17	10 31 56 ["] 29	5 6 33 ["] 6	161 ["] 38
18	8 40 40 ["] 94	16 42 53 ["] 5	128 ["] 45	18	10 34 13 ["] 37	4 50 25 ["] 5	161 ["] 58
19	8 43 8 ["] 43	16 30 2 ["] 8	129 ["] 58	19	10 36 30 ["] 30	4 34 16 ["] 0	161 ["] 78
20	8 45 35 ["] 68	16 17 5 ["] 3	130 ["] 72	20	10 38 47 ["] 07	4 18 5 ["] 3	161 ["] 98
21	8 48 2 ["] 67	16 4 1 ["] 0	131 ["] 82	21	10 41 3 ["] 68	4 1 53 ["] 4	162 ["] 18
22	8 50 29 ["] 41	15 50 50 ["] 1	132 ["] 90	22	10 43 20 ["] 16	3 45 40 ["] 5	162 ["] 28
23	8 52 55 ["] 91	N. 15 37 32 ["] 7	133 ["] 98	23	10 45 36 ["] 49	N. 3 29 26 ["] 8	162 ["] 43
<i>SATURDAY 6.</i>				<i>MONDAY 8.</i>			
0	8 55 22 ["] 15	N. 15 24 8 ["] 8	135 ["] 02	0	10 47 52 ["] 67	N. 3 13 12 ["] 2	162 ["] 53
1	8 57 48 ["] 13	15 10 38 ["] 7	136 ["] 07	1	10 50 8 ["] 72	2 56 57 ["] 0	162 ["] 63
2	9 0 13 ["] 87	14 57 2 ["] 3	137 ["] 07	2	10 52 24 ["] 64	2 40 41 ["] 2	162 ["] 70
3	9 2 39 ["] 35	14 43 19 ["] 9	138 ["] 07	3	10 54 40 ["] 44	2 24 25 ["] 0	162 ["] 75
4	9 5 4 ["] 59	14 29 31 ["] 5	139 ["] 03	4	10 56 56 ["] 11	2 8 8 ["] 5	162 ["] 80
5	9 7 29 ["] 57	14 15 37 ["] 3	140 ["] 00	5	10 59 11 ["] 66	1 51 51 ["] 7	162 ["] 82
6	9 9 54 ["] 31	14 1 37 ["] 3	140 ["] 93	6	11 1 27 ["] 10	1 35 34 ["] 8	162 ["] 82
7	9 12 18 ["] 79	13 47 31 ["] 7	141 ["] 85	7	11 3 42 ["] 42	1 19 17 ["] 9	162 ["] 78
8	9 14 43 ["] 03	13 33 20 ["] 6	142 ["] 75	8	11 5 57 ["] 64	1 3 1 ["] 2	162 ["] 77
9	9 17 7 ["] 02	13 19 4 ["] 1	143 ["] 63	9	11 8 12 ["] 75	0 46 44 ["] 6	162 ["] 70
10	9 19 30 ["] 77	13 4 42 ["] 3	144 ["] 50	10	11 10 27 ["] 77	0 30 28 ["] 4	162 ["] 63
11	9 21 54 ["] 27	12 50 15 ["] 3	145 ["] 33	11	11 12 42 ["] 69	N. 0 14 12 ["] 6	162 ["] 53
12	9 24 17 ["] 53	12 35 43 ["] 3	146 ["] 17	12	11 14 57 ["] 52	S. 0 2 26 ["] 6	162 ["] 43
13	9 26 40 ["] 55	12 21 6 ["] 3	146 ["] 95	13	11 17 12 ["] 26		162 ["] 32
14	9 29 3 ["] 34	12 6 24 ["] 6	147 ["] 75	14	11 19 26 ["] 92		162 ["] 15
15	9 31 25 ["] 89	11 51 38 ["] 1	148 ["] 50	15	11 21 41 ["] 50		162 ["] 00
16	9 33 48 ["] 20	11 36 47 ["] 1	149 ["] 25	16	11 23 56 ["] 00		161 ["] 52
17	9 36 10 ["] 28	11 21 51 ["] 6	149 ["] 97	17	11 26 10 ["] 43		161 ["] 63
18	9 38 32 ["] 12	11 6 51 ["] 8	150 ["] 68	18	11 28 24 ["] 80		161 ["] 40
19	9 40 53 ["] 74	10 51 47 ["] 7	151 ["] 35	19	11 30 38 ["] 11		161 ["] 17
20	9 43 15 ["] 12	10 36 39 ["] 6	152 ["] 02	20	11 32 51 ["] 11		161 ["] 11
21	9 45 36 ["] 29	10 21 27 ["] 5	152 ["] 67	21	11 35 4 ["] 11		161 ["] 11
22	9 47 57 ["] 23	10 6 11 ["] 5	153 ["] 30	22	11 37 16 ["] 11		161 ["] 11
23	9 50 17 ["] 94	9 50 51 ["] 7	153 ["] 88	23	11 39 28 ["] 11		161 ["] 11
24	9 52 38 ["] 44	N. 9 35 28 ["] 4		24	11 41 40 ["] 11		161 ["] 11

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
TUESDAY 9.				THURSDAY 11.			
0	11 41 49 ^{h m s} 80	S. 3 15 44 ^{o ' ' "} 1	159 78	0	13 29 24 ^{h m s} 71	S. 14 58 8 ^{o ' ' "} 0	126 7
1	11 44 3 01	3 31 48 5	159 40	1	13 31 40 88	13 10 49 2	125 57
2	11 46 17 78	3 47 38 9	159 05	2	13 33 57 17	15 23 24 3	124 53
3	11 48 31 72	4 3 33 2	158 58	3	13 36 13 56	15 35 53 3	123 43
4	11 50 45 63	4 19 25 3	158 28	4	13 38 30 06	15 48 16 2	122 77
5	11 52 59 52	4 35 15 0	157 90	5	13 40 46 69	16 0 32 8	121 73
6	11 55 13 39	4 51 2 4	157 47	6	13 43 3 41	16 12 43 2	120 67
7	11 57 27 24	5 6 47 2	157 05	7	13 45 20 25	16 24 47 2	119 58
8	11 59 41 08	5 22 29 5	156 58	8	13 47 37 21	16 36 44 7	118 52
9	12 1 54 92	5 38 9 0	156 13	9	13 49 54 29	16 48 35 8	117 43
10	12 4 8 75	5 53 45 8	155 65	10	13 52 11 49	17 0 20 4	116 32
11	12 6 22 58	6 9 19 7	155 15	11	13 54 29 81	17 11 58 3	115 20
12	12 8 36 41	6 24 50 6	154 65	12	13 56 46 25	17 23 29 6	114 12
13	12 10 50 25	6 40 18 5	154 13	13	13 59 3 81	17 34 54 2	112 97
14	12 13 4 10	6 55 43 2	153 58	14	14 1 21 49	17 46 19 0	111 33
15	12 15 17 97	7 11 4 7	153 03	15	14 3 39 30	17 57 23 0	110 68
16	12 17 31 86	7 26 29 9	152 48	16	14 5 57 22	18 8 27 1	109 53
17	12 19 45 77	7 41 37 6	151 87	17	14 8 15 27	18 19 24 8	108 35
18	12 21 59 70	7 56 48 8	151 24	18	14 10 33 44	18 30 14 4	107 18
19	12 24 13 66	8 11 56 3	150 65	19	14 12 51 72	18 40 57 5	105 98
20	12 26 27 65	8 27 0 2	150 22	20	14 15 10 18	18 51 33 4	104 58
21	12 28 41 68	8 42 0 3	149 37	21	14 17 28 68	19 2 2 2	103 60
22	12 30 55 75	8 56 56 5	148 70	22	14 19 47 34	19 12 23 8	102 28
23	12 33 9 85	S. 9 11 48 7	148 08	23	14 22 6 12	S. 19 23 38 1	101 17
WEDNESDAY 10.				FRIDAY 12.			
0	12 35 24 91	S. 9 26 36 9	147 32	0	14 24 25 02	S. 19 33 45 1	99 33
1	12 37 38 81	9 41 20 9	146 68	1	14 26 44 04	19 43 44 7	98 68
2	12 39 52 46	9 56 0 7	145 92	2	14 29 3 18	19 53 36 8	97 45
3	12 42 6 77	10 10 36 2	145 18	3	14 31 22 43	20 2 21 5	96 20
4	12 44 21 13	10 25 7 3	144 43	4	14 33 41 81	20 11 58 7	94 93
5	12 46 35 36	10 39 33 9	143 68	5	14 36 1 30	20 21 28 3	93 67
6	12 48 50 04	10 53 56 0	142 90	6	14 38 20 91	20 30 50 3	92 38
7	12 51 4 60	11 8 13 4	142 13	7	14 40 40 63	20 40 4 6	91 12
8	12 53 19 22	11 22 26 2	141 32	8	14 43 0 47	20 49 11 3	89 32
9	12 55 33 92	11 36 34 1	140 52	9	14 45 20 42	20 58 10 2	88 32
10	12 57 48 68	11 50 37 2	139 79	10	14 47 40 48	21 7 1 3	87 22
11	13 0 3 33	12 4 35 4	138 55	11	14 50 0 65	21 15 44 6	85 97
12	13 2 18 46	12 18 28 5	138 02	12	14 52 20 93	21 24 20 0	84 60
13	13 4 33 47	12 32 16 6	137 15	13	14 54 41 32	21 32 47 6	83 27
14	13 6 48 57	12 45 59 5	136 28	14	14 57 1 82	21 41 7 2	81 33
15	13 9 3 76	12 59 37 2	135 38	15	14 59 22 41	21 49 18 8	80 62
16	13 11 19 03	13 13 9 5	134 50	16	15 1 43 11	21 57 22 5	79 25
17	13 13 34 40	13 26 36 5	133 58	17	15 4 3 91	22 5 18 0	77 32
18	13 15 49 86	13 39 58 0	132 65	18	15 6 24 80	22 13 5 5	76 57
19	13 18 5 42	13 53 13 9	131 78	19	15 8 45 79	22 20 44 9	75 20
20	13 20 21 07	14 6 24 2	130 78	20	15 11 6 89	22 28 16 1	73 33
21	13 22 36 83	14 19 28 9	129 82	21	15 13 28 05	22 35 39 1	72 45
22	13 24 52 69	14 32 27 8	128 88	22	15 15 49 31	22 42 53 8	71 40
23	13 27 8 65	14 45 20 8	127 87	23	15 18 10 65	22 50 0 4	69 70
24	13 29 24 71	S. 14 58 8 0		24	15 20 32 08	S. 22 56 58 6	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
SATURDAY 13.				MONDAY 15.			
0	15 20 32 ^s 08 ^m	S. 22 56 58 ^s 6 ^m	68 ^s 92 ^m	0	17 14 5 ^s 54 ^m	S. 25 43 53 ^s 1 ^m	0 ^s 25 ^m
1	15 22 53 ^s 58 ^m	23 3 48 ^s 5 ^m	66 ^s 92 ^m	1	17 16 26 ^s 27 ^m	25 43 51 ^s 0 ^m	1 ^s 77 ^m
2	15 25 15 ^s 16 ^m	23 10 30 ^s 0 ^m	66 ^s 83 ^m	2	17 18 46 ^s 87 ^m	25 43 40 ^s 4 ^m	3 ^s 15 ^m
3	15 27 36 ^s 82 ^m	23 17 3 ^s 2 ^m	64 ^s 13 ^m	3	17 21 7 ^s 35 ^m	25 43 21 ^s 5 ^m	4 ^s 85 ^m
4	15 29 58 ^s 54 ^m	23 23 28 ^s 0 ^m	62 ^s 73 ^m	4	17 23 27 ^s 69 ^m	25 43 54 ^s 2 ^m	5 ^s 95 ^m
5	15 32 20 ^s 33 ^m	23 29 44 ^s 4 ^m	61 ^s 92 ^m	5	17 25 47 ^s 89 ^m	25 42 18 ^s 5 ^m	7 ^s 35 ^m
6	15 34 42 ^s 18 ^m	23 35 52 ^s 3 ^m	59 ^s 92 ^m	6	17 28 7 ^s 95 ^m	25 41 34 ^s 4 ^m	8 ^s 75 ^m
7	15 37 4 ^s 10 ^m	23 41 51 ^s 8 ^m	58 ^s 48 ^m	7	17 30 27 ^s 85 ^m	25 40 48 ^s 1 ^m	10 ^s 10 ^m
8	15 39 26 ^s 07 ^m	23 47 42 ^s 7 ^m	57 ^s 08 ^m	8	17 32 47 ^s 61 ^m	25 39 41 ^s 5 ^m	11 ^s 48 ^m
9	15 41 48 ^s 09 ^m	23 53 25 ^s 2 ^m	55 ^s 67 ^m	9	17 35 7 ^s 21 ^m	25 38 32 ^s 6 ^m	12 ^s 85 ^m
10	15 44 10 ^s 16 ^m	23 58 59 ^s 2 ^m	54 ^s 23 ^m	10	17 37 26 ^s 65 ^m	25 37 15 ^s 5 ^m	14 ^s 20 ^m
11	15 46 32 ^s 28 ^m	24 4 24 ^s 6 ^m	52 ^s 22 ^m	11	17 39 45 ^s 93 ^m	25 35 50 ^s 3 ^m	15 ^s 58 ^m
12	15 48 54 ^s 44 ^m	24 9 41 ^s 5 ^m	51 ^s 23 ^m	12	17 42 5 ^s 03 ^m	25 34 16 ^s 8 ^m	16 ^s 98 ^m
13	15 51 16 ^s 64 ^m	24 14 49 ^s 8 ^m	49 ^s 97 ^m	13	17 44 23 ^s 97 ^m	25 32 35 ^s 2 ^m	18 ^s 27 ^m
14	15 53 38 ^s 88 ^m	24 19 49 ^s 6 ^m	48 ^s 52 ^m	14	17 46 42 ^s 73 ^m	25 30 45 ^s 6 ^m	19 ^s 62 ^m
15	15 56 1 ^s 15 ^m	24 24 40 ^s 7 ^m	47 ^s 10 ^m	15	17 49 1 ^s 31 ^m	25 28 47 ^s 9 ^m	20 ^s 95 ^m
16	15 58 23 ^s 45 ^m	24 29 23 ^s 3 ^m	45 ^s 66 ^m	16	17 51 19 ^s 70 ^m	25 26 42 ^s 2 ^m	22 ^s 22 ^m
17	16 0 45 ^s 77 ^m	24 33 57 ^s 2 ^m	44 ^s 22 ^m	17	17 53 37 ^s 90 ^m	25 24 28 ^s 5 ^m	23 ^s 62 ^m
18	16 3 8 ^s 11 ^m	24 38 22 ^s 5 ^m	42 ^s 77 ^m	18	17 55 55 ^s 92 ^m	25 22 6 ^s 8 ^m	24 ^s 92 ^m
19	16 5 30 ^s 47 ^m	24 42 39 ^s 1 ^m	41 ^s 23 ^m	19	17 58 13 ^s 73 ^m	25 19 37 ^s 2 ^m	26 ^s 22 ^m
20	16 7 52 ^s 83 ^m	24 46 47 ^s 1 ^m	39 ^s 22 ^m	20	18 0 31 ^s 35 ^m	25 16 59 ^s 8 ^m	27 ^s 55 ^m
21	16 10 15 ^s 20 ^m	24 50 46 ^s 4 ^m	38 ^s 44 ^m	21	18 2 48 ^s 76 ^m	25 14 14 ^s 5 ^m	28 ^s 85 ^m
22	16 12 37 ^s 58 ^m	24 54 37 ^s 0 ^m	36 ^s 92 ^m	22	18 5 5 ^s 97 ^m	25 11 21 ^s 4 ^m	30 ^s 12 ^m
23	16 14 59 ^s 95 ^m	S. 24 58 18 ^s 9 ^m	35 ^s 55 ^m	23	18 7 22 ^s 96 ^m	S. 25 8 20 ^s 6 ^m	31 ^s 42 ^m
SUNDAY 14.				TUESDAY 16.			
0	16 17 22 ^s 33 ^m	S. 25 1 52 ^s 2 ^m	34 ^s 10 ^m	0	18 9 39 ^s 73 ^m	S. 25 5 12 ^s 0 ^m	32 ^s 70 ^m
1	16 19 44 ^s 69 ^m	25 5 16 ^s 8 ^m	32 ^s 42 ^m	1	18 11 56 ^s 29 ^m	25 1 55 ^s 8 ^m	32 ^s 98 ^m
2	16 22 7 ^s 03 ^m	25 8 32 ^s 6 ^m	31 ^s 20 ^m	2	18 14 12 ^s 63 ^m	24 58 31 ^s 9 ^m	32 ^s 25 ^m
3	16 24 29 ^s 36 ^m	25 11 39 ^s 8 ^m	29 ^s 75 ^m	3	18 16 28 ^s 74 ^m	24 55 0 ^s 4 ^m	32 ^s 50 ^m
4	16 26 51 ^s 66 ^m	25 14 38 ^s 3 ^m	28 ^s 30 ^m	4	18 18 44 ^s 62 ^m	24 51 21 ^s 4 ^m	32 ^s 75 ^m
5	16 29 13 ^s 93 ^m	25 17 28 ^s 1 ^m	26 ^s 95 ^m	5	18 21 0 ^s 22 ^m	24 47 34 ^s 9 ^m	32 ^s 98 ^m
6	16 31 36 ^s 17 ^m	25 20 9 ^s 2 ^m	25 ^s 40 ^m	6	18 23 15 ^s 71 ^m	24 43 41 ^s 0 ^m	40 ^s 22 ^m
7	16 33 58 ^s 37 ^m	25 22 41 ^s 6 ^m	23 ^s 95 ^m	7	18 25 30 ^s 89 ^m	24 39 39 ^s 6 ^m	41 ^s 47 ^m
8	16 36 20 ^s 53 ^m	25 25 5 ^s 3 ^m	22 ^s 52 ^m	8	18 27 45 ^s 84 ^m	24 35 30 ^s 8 ^m	42 ^s 67 ^m
9	16 38 42 ^s 64 ^m	25 27 20 ^s 4 ^m	21 ^s 07 ^m	9	18 30 0 ^s 55 ^m	24 31 14 ^s 8 ^m	43 ^s 90 ^m
10	16 41 4 ^s 71 ^m	25 29 26 ^s 8 ^m	19 ^s 63 ^m	10	18 32 15 ^s 02 ^m	24 26 51 ^s 4 ^m	45 ^s 08 ^m
11	16 43 26 ^s 71 ^m	25 31 24 ^s 6 ^m	18 ^s 18 ^m	11	18 34 29 ^s 24 ^m	24 22 20 ^s 9 ^m	46 ^s 30 ^m
12	16 45 48 ^s 65 ^m	25 33 13 ^s 7 ^m	16 ^s 75 ^m	12	18 36 43 ^s 21 ^m	24 17 43 ^s 1 ^m	47 ^s 48 ^m
13	16 48 10 ^s 53 ^m	25 34 54 ^s 2 ^m	15 ^s 32 ^m	13	18 38 56 ^s 93 ^m	24 12 52 ^s 1 ^m	47 ^s 65 ^m
14	16 50 32 ^s 34 ^m	25 36 26 ^s 1 ^m	13 ^s 7 ^m	14	18 41 10 ^s 41 ^m	24 8 1 ^s 8 ^m	47 ^s 83 ^m
15	16 52 54 ^s 07 ^m	25 37 49 ^s 3 ^m	12 ^s 45 ^m	15	18 43 23 ^s 62 ^m	24 3 3 ^s 10 ^m	47 ^s 100 ^m
16	16 55 15 ^s 72 ^m	25 39 4 ^s 0 ^m	11 ^s 00 ^m	16	18 45 36 ^s 58 ^m	23 58 1 ^s 5 ^m	47 ^s 115 ^m
17	16 57 37 ^s 29 ^m	25 40 10 ^s 0 ^m	9 ^s 58 ^m	17	18 47 49 ^s 28 ^m	23 52 2 ^s 2 ^m	47 ^s 130 ^m
18	16 59 58 ^s 77 ^m	25 41 7 ^s 5 ^m	8 ^s 15 ^m	18	18 50 1 ^s 72 ^m	23 47 3 ^s 7 ^m	47 ^s 145 ^m
19	17 2 20 ^s 16 ^m	25 41 56 ^s 4 ^m	6 ^s 73 ^m	19	18 52 24 ^s 90 ^m	23 41 4 ^s 12 ^m	47 ^s 160 ^m
20	17 4 41 ^s 45 ^m	25 42 36 ^s 8 ^m	5 ^s 30 ^m	20	18 54 37 ^s 91 ^m	23 36 5 ^s 17 ^m	47 ^s 175 ^m
21	17 7 2 ^s 64 ^m	25 43 8 ^s 6 ^m	3 ^s 82 ^m	21	18 56 50 ^s 15 ^m	23 31 6 ^s 22 ^m	47 ^s 190 ^m
22	17 9 23 ^s 72 ^m	25 43 31 ^s 9 ^m	2 ^s 42 ^m	22	18 59 3 ^s 63 ^m	23 26 7 ^s 27 ^m	47 ^s 205 ^m
23	17 11 44 ^s 69 ^m	25 43 46 ^s 8 ^m	1 ^s 05 ^m	23	19 1 16 ^s 34 ^m	23 21 8 ^s 32 ^m	47 ^s 220 ^m
24	17 14 5 ^s 54 ^m	S. 25 43 53 ^s 1 ^m		24	19 3 27 ^s 17 ^m	S. 23 1 ^s 37 ^m	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>WEDNESDAY 17.</i>				<i>FRIDAY 19.</i>			
0	19 3 10 ^{h m s} ·77	S. 23 13 7 ^{o ' ' N} ·8	61 ^{''} ·10	0	20 42 24 ^{h m s} ·67	S. 16 33 45 ^{o ' ' N} ·7	102 ^{''} ·41
1	19 5 21·33	23 7 1·2	62·20	1	20 44 22·14	16 23 29·9	103·27
2	19 7 31·62	23 0 48·0	63·25	2	20 46 19·37	16 13 10·3	103·30
3	19 9 41·64	22 54 28·5	64·23	3	20 48 16·35	16 2 46·9	104·43
4	19 11 51·37	22 48 2·5	65·27	4	20 50 13·09	15 52 19·7	105·13
5	19 14 0·83	22 41 30·3	66·42	5	20 52 9·59	15 41 48·9	106·75
6	19 16 10·01	22 34 51·8	67·47	6	20 54 5·86	15 31 14·4	106·24
7	19 18 18·92	22 28 7·0	68·47	7	20 56 1·88	15 20 36·3	106·42
8	19 20 27·54	22 21 16·2	69·50	8	20 57 57·68	15 9 54·8	107·42
9	19 22 35·89	22 14 19·2	70·52	9	20 59 53·24	14 59 9·7	108·06
10	19 24 43·96	22 7 16·1	71·50	10	21 1 48·58	14 48 21·2	108·43
11	19 26 51·74	22 0 7·1	72·50	11	21 3 43·69	14 37 29·4	109·20
12	19 28 59·24	21 52 52·1	73·47	12	21 5 38·57	14 26 34·2	109·73
13	19 31 6·46	21 45 31·3	74·45	13	21 7 33·24	14 15 35·8	110·27
14	19 33 13·40	21 38 4·6	75·42	14	21 9 27·69	14 4 34·2	110·90
15	19 35 20·06	21 30 32·1	76·35	15	21 11 21·92	13 53 29·4	111·22
16	19 37 26·44	21 22 54·0	77·32	16	21 13 15·94	13 42 21·5	111·33
17	19 39 32·53	21 15 10·1	78·23	17	21 15 9·75	13 31 10·5	112·33
18	19 41 38·35	21 7 20·7	79·17	18	21 17 3·35	13 19 56·5	112·22
19	19 43 43·88	20 59 25·7	80·08	19	21 18 56·74	13 8 39·6	112·22
20	19 45 49·13	20 51 25·2	80·98	20	21 20 49·94	12 57 19·7	113·72
21	19 47 54·09	20 43 19·3	81·88	21	21 22 42·93	12 45 57·0	114·22
22	19 49 58·78	20 35 8·0	82·78	22	21 24 35·72	12 34 31·5	114·72
23	19 52 3·18	S. 20 26 51·3	83·65	23	21 26 28·32	S. 12 23 3·2	115·17
<i>THURSDAY 18.</i>				<i>SATURDAY 20.</i>			
0	19 54 7·31	S. 20 18 29·4	84·52	0	21 28 20·73	S. 12 11 32·2	115·42
1	19 56 11·15	20 10 2·3	85·40	1	21 30 12·95	11 59 58·5	116·06
2	19 58 14·72	20 1 29·9	86·23	2	21 32 4·98	11 48 22·2	116·48
3	20 0 18·00	19 52 52·5	87·07	3	21 33 56·83	11 36 43·3	116·28
4	20 2 21·01	19 44 10·1	87·92	4	21 35 48·50	11 25 2·0	117·32
5	20 4 23·75	19 35 22·6	88·73	5	21 37 39·99	11 13 18·1	117·70
6	20 6 26·20	19 26 30·2	89·55	6	21 39 31·31	11 1 31·9	118·12
7	20 8 28·38	19 17 32·9	90·25	7	21 41 22·45	10 49 43·2	118·48
8	20 10 30·29	19 8 30·8	91·15	8	21 43 13·43	10 37 52·3	118·27
9	20 12 31·93	18 59 23·9	91·93	9	21 45 4·23	10 25 59·1	119·25
10	20 14 33·29	18 50 12·3	92·70	10	21 46 54·88	10 14 3·6	119·60
11	20 16 34·38	18 40 56·1	93·48	11	21 48 45·36	10 2 6·0	119·35
12	20 18 35·20	18 31 35·2	94·23	12	21 50 35·69	9 50 6·3	120·30
13	20 20 35·76	18 22 9·8	94·98	13	21 52 25·86	9 38 4·5	120·63
14	20 22 36·03	18 12 39·9	95·72	14	21 54 15·89	9 26 0·7	120·97
15	20 24 36·07	18 3 5·6	96·45	15	21 56 5·76	9 13 54·9	121·28
16	20 26 35·84	17 53 26·9	97·18	16	21 57 55·49	9 1 47·2	121·60
17	20 28 35·34	17 43 43·8	97·88	17	21 59 45·07	8 49 37·6	121·92
18	20 30 34·58	17 33 56·5	98·60	18	22 1 34·52	8 37 26·1	122·23
19	20 32 33·57	17 24 4·9	99·28	19	22 3 23·83	8 25 12·8	122·60
20	20 34 32·29	17 14 9·2	99·97	20	22 5 13·01	8 12 57·8	122·78
21	20 36 30·76	17 4 9·4	100·65	21	22 7 2·06	8 0 41·1	123·07
22	20 38 28·98	16 54 5·5	101·32	22	22 8 50·98	7 48 22·7	123·32
23	20 40 26·95	16 43 57·6	101·98	23	22 10 39·78	7 36 2·8	123·60
24	20 42 24·67	S. 16 33 45·7		24	22 12 28·46	S. 7 23 41·2	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>SUNDAY 21.</i>				<i>TUESDAY 23.</i>			
0	22 12 28 ^{h m s} ·46	S. 7 23 41 ^{o ' " "} ·2	123 [°] ·85	0	23 38 10 ^{h m s} ·69	N. 2 45 58 ^{o ' " "} ·2	127 [°] ·52
1	22 14 17 ^{h m s} ·03	7 11 18 ^{o ' "} ·1	124 [°] ·10	1	23 39 57 ^{h m s} ·68	2 58 43 ^{o ' "} ·3	127 [°] ·42
2	22 16 5 ^{h m s} ·48	6 58 53 ^{o ' "} ·5	124 [°] ·33	2	23 41 44 ^{h m s} ·72	3 11 27 ^{o ' "} ·8	127 [°] ·32
3	22 17 53 ^{h m s} ·83	6 46 27 ^{o ' "} ·5	124 [°] ·57	3	23 43 31 ^{h m s} ·81	3 24 11 ^{o ' "} ·7	127 [°] ·22
4	22 19 42 ^{h m s} ·07	6 34 0 ^{o ' "} ·1	124 [°] ·78	4	23 45 18 ^{h m s} ·97	3 36 55 ^{o ' "} ·0	127 [°] ·08
5	22 21 30 ^{h m s} ·21	6 21 31 ^{o ' "} ·4	125 [°] ·00	5	23 47 6 ^{h m s} ·19	3 49 37 ^{o ' "} ·5	126 [°] ·97
6	22 23 18 ^{h m s} ·24	6 9 1 ^{o ' "} ·4	125 [°] ·22	6	23 48 53 ^{h m s} ·48	4 2 19 ^{o ' "} ·3	126 [°] ·83
7	22 25 6 ^{h m s} ·18	5 56 30 ^{o ' "} ·1	125 [°] ·42	7	23 50 40 ^{h m s} ·84	4 15 0 ^{o ' "} ·3	126 [°] ·70
8	22 26 54 ^{h m s} ·03	5 43 57 ^{o ' "} ·6	125 [°] ·62	8	23 52 28 ^{h m s} ·28	4 27 40 ^{o ' "} ·5	126 [°] ·55
9	22 28 41 ^{h m s} ·79	5 31 23 ^{o ' "} ·9	125 [°] ·80	9	23 54 15 ^{h m s} ·79	4 40 19 ^{o ' "} ·8	126 [°] ·40
10	22 30 29 ^{h m s} ·46	5 18 49 ^{o ' "} ·1	125 [°] ·98	10	23 56 3 ^{h m s} ·39	4 52 58 ^{o ' "} ·2	126 [°] ·23
11	22 32 17 ^{h m s} ·05	5 6 13 ^{o ' "} ·2	126 [°] ·15	11	23 57 51 ^{h m s} ·07	5 5 35 ^{o ' "} ·6	126 [°] ·07
12	22 34 4 ^{h m s} ·55	4 53 36 ^{o ' "} ·3	126 [°] ·32	12	23 59 38 ^{h m s} ·84	5 18 12 ^{o ' "} ·0	125 [°] ·90
13	22 35 51 ^{h m s} ·98	4 40 58 ^{o ' "} ·4	126 [°] ·48	13	0 1 26 ^{h m s} ·70	5 30 47 ^{o ' "} ·4	125 [°] ·70
14	22 37 39 ^{h m s} ·34	4 28 19 ^{o ' "} ·5	126 [°] ·62	14	0 3 14 ^{h m s} ·67	5 43 21 ^{o ' "} ·6	125 [°] ·52
15	22 39 26 ^{h m s} ·63	4 15 39 ^{o ' "} ·8	126 [°] ·77	15	0 5 2 ^{h m s} ·73	5 55 54 ^{o ' "} ·7	125 [°] ·33
16	22 41 13 ^{h m s} ·86	4 2 59 ^{o ' "} ·2	126 [°] ·92	16	0 6 50 ^{h m s} ·90	6 8 26 ^{o ' "} ·7	125 [°] ·12
17	22 43 1 ^{h m s} ·02	3 50 17 ^{o ' "} ·7	127 [°] ·03	17	0 8 39 ^{h m s} ·17	6 20 57 ^{o ' "} ·4	124 [°] ·92
18	22 44 48 ^{h m s} ·12	3 37 35 ^{o ' "} ·5	127 [°] ·15	18	0 10 27 ^{h m s} ·55	6 33 26 ^{o ' "} ·9	124 [°] ·68
19	22 46 35 ^{h m s} ·16	3 24 52 ^{o ' "} ·6	127 [°] ·27	19	0 12 16 ^{h m s} ·05	6 45 55 ^{o ' "} ·0	124 [°] ·47
20	22 48 22 ^{h m s} ·16	3 12 9 ^{o ' "} ·0	127 [°] ·38	20	0 14 4 ^{h m s} ·67	6 58 21 ^{o ' "} ·8	124 [°] ·23
21	22 50 9 ^{h m s} ·10	2 59 24 ^{o ' "} ·7	127 [°] ·47	21	0 15 53 ^{h m s} ·41	7 10 47 ^{o ' "} ·2	124 [°] ·00
22	22 51 56 ^{h m s} ·00	2 46 39 ^{o ' "} ·9	127 [°] ·57	22	0 17 42 ^{h m s} ·27	7 23 11 ^{o ' "} ·2	123 [°] ·75
23	22 53 42 ^{h m s} ·85	S. 2 33 54 ^{o ' "} ·5	127 [°] ·67	23	0 19 31 ^{h m s} ·27	N. 7 35 33 ^{o ' "} ·7	123 [°] ·48
<i>MONDAY 22.</i>				<i>WEDNESDAY 24.</i>			
0	22 55 29 ^{h m s} ·67	S. 2 21 8 ^{o ' "} ·5	127 [°] ·73	0	0 21 20 ^{h m s} ·39	N. 7 47 54 ^{o ' "} ·6	123 [°] ·23
1	22 57 16 ^{h m s} ·45	2 8 22 ^{o ' "} ·1	127 [°] ·80	1	0 23 9 ^{h m s} ·65	8 0 14 ^{o ' "} ·0	122 [°] ·95
2	22 59 3 ^{h m s} ·20	1 55 35 ^{o ' "} ·3	127 [°] ·88	2	0 24 59 ^{h m s} ·05	8 12 31 ^{o ' "} ·7	122 [°] ·68
3	23 0 49 ^{h m s} ·92	1 42 48 ^{o ' "} ·0	127 [°] ·92	3	0 26 48 ^{h m s} ·60	8 24 47 ^{o ' "} ·8	122 [°] ·40
4	23 2 36 ^{h m s} ·61	1 30 0 ^{o ' "} ·5	127 [°] ·98	4	0 28 38 ^{h m s} ·29	8 37 2 ^{o ' "} ·2	122 [°] ·12
5	23 4 23 ^{h m s} ·28	1 17 12 ^{o ' "} ·6	128 [°] ·02	5	0 30 28 ^{h m s} ·13	8 49 14 ^{o ' "} ·9	121 [°] ·82
6	23 6 9 ^{h m s} ·93	1 4 24 ^{o ' "} ·5	128 [°] ·07	6	0 32 18 ^{h m s} ·12	9 1 25 ^{o ' "} ·8	121 [°] ·50
7	23 7 56 ^{h m s} ·57	0 51 36 ^{o ' "} ·1	128 [°] ·08	7	0 34 8 ^{h m s} ·27	9 13 34 ^{o ' "} ·8	121 [°] ·18
8	23 9 43 ^{h m s} ·20	0 38 47 ^{o ' "} ·6	128 [°] ·12	8	0 35 58 ^{h m s} ·58	9 25 41 ^{o ' "} ·9	120 [°] ·87
9	23 11 29 ^{h m s} ·82	0 25 58 ^{o ' "} ·9	128 [°] ·12	9	0 37 49 ^{h m s} ·06	9 37 47 ^{o ' "} ·1	120 [°] ·53
10	23 13 16 ^{h m s} ·44	0 13 10 ^{o ' "} ·2	128 [°] ·13	10	0 39 39 ^{h m s} ·70	9 49 50 ^{o ' "} ·3	120 [°] ·22
11	23 15 3 ^{h m s} ·06	S. 0 0 21 ^{o ' "} ·4	128 [°] ·13	11	0 41 30 ^{h m s} ·51	10 1 51 ^{o ' "} ·6	119 [°] ·85
12	23 16 49 ^{h m s} ·68	N. 0 12 27 ^{o ' "} ·4	128 [°] ·12	12	0 43 21 ^{h m s} ·50	10 14 4 ^{o ' "} ·5	119 [°] ·50
13	23 18 36 ^{h m s} ·31	0 25 16 ^{o ' "} ·1	128 [°] ·12	13	0 45 12 ^{h m s} ·67	10 26 5 ^{o ' "} ·5	119 [°] ·15
14	23 20 22 ^{h m s} ·95	0 38 4 ^{o ' "} ·8	128 [°] ·10	14	0 47 4 ^{h m s} ·02	10 38 5 ^{o ' "} ·5	118 [°] ·80
15	23 22 9 ^{h m s} ·60	0 50 53 ^{o ' "} ·4	128 [°] ·07	15	0 48 35 ^{h m s} ·55	10 50 5 ^{o ' "} ·5	118 [°] ·45
16	23 23 56 ^{h m s} ·27	1 3 41 ^{o ' "} ·8	128 [°] ·03	16	0 50 47 ^{h m s} ·28	11 2 5 ^{o ' "} ·5	118 [°] ·10
17	23 25 42 ^{h m s} ·97	1 16 30 ^{o ' "} ·0	127 [°] ·98	17	0 52 39 ^{h m s} ·20	11 14 5 ^{o ' "} ·5	117 [°] ·75
18	23 27 29 ^{h m s} ·69	1 29 17 ^{o ' "} ·9	127 [°] ·95	18	0 54 31 ^{h m s} ·31	11 26 5 ^{o ' "} ·5	117 [°] ·40
19	23 29 16 ^{h m s} ·43	1 42 5 ^{o ' "} ·6	127 [°] ·88	19	0 56 23 ^{h m s} ·62	11 38 5 ^{o ' "} ·5	117 [°] ·05
20	23 31 3 ^{h m s} ·20	1 54 52 ^{o ' "} ·9	127 [°] ·83	20	0 58 16 ^{h m s} ·14	11 50 5 ^{o ' "} ·5	116 [°] ·70
21	23 32 50 ^{h m s} ·02	2 7 39 ^{o ' "} ·9	127 [°] ·77	21	1 0 8 ^{h m s} ·86	12 2 5 ^{o ' "} ·5	116 [°] ·35
22	23 34 36 ^{h m s} ·87	2 20 26 ^{o ' "} ·5	127 [°] ·68	22	1 2 1 ^{h m s} ·80	12 14 5 ^{o ' "} ·5	116 [°] ·00
23	23 36 23 ^{h m s} ·76	2 33 12 ^{o ' "} ·6	127 [°] ·60	23	1 3 54 ^{h m s} ·94	12 26 5 ^{o ' "} ·5	115 [°] ·65
24	23 38 10 ^{h m s} ·69	N. 2 45 58 ^{o ' "} ·2		24	1 5 48 ^{h m s} ·30	12 38 5 ^{o ' "} ·5	115 [°] ·30

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
THURSDAY 25.				SATURDAY 27.			
0	1 5 48 ^h 30 ^m	N. 12 34 42 ^s	114 ^o 67 ^m	0	2 41 44 ^h 80 ^m	N. 20 38 15 ^s	82 ^o 90 ^m
1	1 7 41 ^h 88 ^m	12 46 10 ^s	114 ^o 20 ^m	1	2 43 52 ^h 36 ^m	20 46 30 ^s	81 ^o 46 ^m
2	1 9 35 ^h 69 ^m	12 57 35 ^s	113 ^o 75 ^m	2	2 46 0 ^h 27 ^m	20 54 39 ^s	80 ^o 47 ^m
3	1 11 29 ^h 72 ^m	13 8 57 ^s	113 ^o 27 ^m	3	2 48 8 ^h 52 ^m	21 2 43 ^s	79 ^o 73 ^m
4	1 13 23 ^h 98 ^m	13 20 17 ^s	112 ^o 78 ^m	4	2 50 17 ^h 12 ^m	21 10 42 ^s	78 ^o 40 ^m
5	1 15 18 ^h 48 ^m	13 31 34 ^s	112 ^o 30 ^m	5	2 52 26 ^h 06 ^m	21 18 34 ^s	77 ^o 33 ^m
6	1 17 13 ^h 21 ^m	13 42 48 ^s	111 ^o 78 ^m	6	2 54 35 ^h 35 ^m	21 26 21 ^s	76 ^o 47 ^m
7	1 19 8 ^h 18 ^m	13 53 58 ^s	111 ^o 30 ^m	7	2 56 45 ^h 00 ^m	21 34 3 ^s	75 ^o 40 ^m
8	1 21 3 ^h 40 ^m	14 5 6 ^s	110 ^o 77 ^m	8	2 58 54 ^h 99 ^m	21 41 38 ^s	74 ^o 30 ^m
9	1 22 58 ^h 86 ^m	14 16 11 ^s	110 ^o 25 ^m	9	3 1 5 ^h 23 ^m	21 49 7 ^s	73 ^o 35 ^m
10	1 24 54 ^h 57 ^m	14 27 12 ^s	109 ^o 72 ^m	10	3 3 16 ^h 03 ^m	21 56 31 ^s	72 ^o 40 ^m
11	1 26 50 ^h 54 ^m	14 38 10 ^s	109 ^o 18 ^m	11	3 5 27 ^h 07 ^m	22 3 48 ^s	71 ^o 41 ^m
12	1 28 46 ^h 76 ^m	14 49 6 ^s	108 ^o 63 ^m	12	3 7 38 ^h 47 ^m	22 11 0 ^s	70 ^o 45 ^m
13	1 30 43 ^h 24 ^m	14 59 57 ^s	108 ^o 07 ^m	13	3 9 50 ^h 22 ^m	22 18 5 ^s	69 ^o 33 ^m
14	1 32 39 ^h 98 ^m	15 10 46 ^s	107 ^o 48 ^m	14	3 12 2 ^h 32 ^m	22 25 4 ^s	68 ^o 75 ^m
15	1 34 36 ^h 99 ^m	15 21 31 ^s	106 ^o 33 ^m	15	3 14 14 ^h 77 ^m	22 31 56 ^s	67 ^o 70 ^m
16	1 36 34 ^h 26 ^m	15 32 12 ^s	106 ^o 33 ^m	16	3 16 27 ^h 58 ^m	22 38 42 ^s	66 ^o 44 ^m
17	1 38 31 ^h 81 ^m	15 42 50 ^s	105 ^o 73 ^m	17	3 18 40 ^h 74 ^m	22 45 22 ^s	65 ^o 43 ^m
18	1 40 29 ^h 63 ^m	15 53 25 ^s	105 ^o 13 ^m	18	3 20 54 ^h 25 ^m	22 51 55 ^s	64 ^o 43 ^m
19	1 42 27 ^h 73 ^m	16 3 53 ^s	104 ^o 53 ^m	19	3 23 8 ^h 11 ^m	22 58 22 ^s	63 ^o 33 ^m
20	1 44 26 ^h 11 ^m	16 14 23 ^s	103 ^o 30 ^m	20	3 25 22 ^h 32 ^m	23 4 42 ^s	62 ^o 20 ^m
21	1 46 24 ^h 77 ^m	16 24 46 ^s	103 ^o 27 ^m	21	3 27 36 ^h 89 ^m	23 10 55 ^s	61 ^o 30 ^m
22	1 48 23 ^h 71 ^m	16 35 6 ^s	102 ^o 42 ^m	22	3 29 51 ^h 80 ^m	23 17 2 ^s	59 ^o 35 ^m
23	1 50 22 ^h 94 ^m	N. 16 45 21 ^s	101 ^o 38 ^m	23	3 32 7 ^h 07 ^m	N. 23 23 1 ^s	58 ^o 75 ^m
FRIDAY 26.				SUNDAY 28.			
0	1 52 22 ^h 47 ^m	N. 16 55 33 ^s	101 ^o 32 ^m	0	3 34 22 ^h 67 ^m	N. 23 28 54 ^s	57 ^o 44 ^m
1	1 54 22 ^h 29 ^m	17 5 41 ^s	100 ^o 65 ^m	1	3 36 38 ^h 63 ^m	23 34 40 ^s	56 ^o 45 ^m
2	1 56 22 ^h 40 ^m	17 15 45 ^s	99 ^o 37 ^m	2	3 38 54 ^h 94 ^m	23 40 19 ^s	55 ^o 27 ^m
3	1 58 22 ^h 82 ^m	17 25 45 ^s	99 ^o 28 ^m	3	3 41 11 ^h 59 ^m	23 45 50 ^s	54 ^o 07 ^m
4	2 0 23 ^h 54 ^m	17 35 41 ^s	98 ^o 58 ^m	4	3 43 28 ^h 59 ^m	23 51 15 ^s	52 ^o 37 ^m
5	2 2 24 ^h 56 ^m	17 45 32 ^s	97 ^o 87 ^m	5	3 45 45 ^h 93 ^m	23 56 32 ^s	51 ^o 55 ^m
6	2 4 25 ^h 89 ^m	17 55 19 ^s	97 ^o 15 ^m	6	3 48 3 ^h 61 ^m	24 1 42 ^s	50 ^o 42 ^m
7	2 6 27 ^h 53 ^m	18 5 2 ^s	96 ^o 43 ^m	7	3 50 21 ^h 63 ^m	24 6 44 ^s	49 ^o 20 ^m
8	2 8 29 ^h 48 ^m	18 14 41 ^s	95 ^o 68 ^m	8	3 52 39 ^h 99 ^m	24 11 39 ^s	47 ^o 33 ^m
9	2 10 31 ^h 75 ^m	18 24 15 ^s	94 ^o 35 ^m	9	3 54 58 ^h 68 ^m	24 16 27 ^s	46 ^o 47 ^m
10	2 12 34 ^h 33 ^m	18 33 45 ^s	94 ^o 18 ^m	10	3 57 17 ^h 71 ^m	24 21 7 ^s	45 ^o 43 ^m
11	2 14 37 ^h 22 ^m	18 43 10 ^s	93 ^o 42 ^m	11	3 59 37 ^h 07 ^m	24 25 39 ^s	44 ^o 13 ^m
12	2 16 40 ^h 44 ^m	18 52 30 ^s	92 ^o 63 ^m	12	4 1 56 ^h 76 ^m	24 30 4 ^s	42 ^o 25 ^m
13	2 18 43 ^h 98 ^m	19 1 46 ^s	91 ^o 35 ^m	13	4 4 16 ^h 78 ^m	24 34 21 ^s	41 ^o 23 ^m
14	2 20 47 ^h 84 ^m	19 10 57 ^s	91 ^o 07 ^m	14	4 6 37 ^h 12 ^m	24 38 31 ^s	40 ^o 23 ^m
15	2 22 52 ^h 04 ^m	19 20 3 ^s	90 ^o 33 ^m	15	4 8 57 ^h 78 ^m	24 42 32 ^s	38 ^o 52 ^m
16	2 24 56 ^h 56 ^m	19 29 5 ^s	89 ^o 43 ^m	16	4 11 18 ^h 76 ^m	24 46 25 ^s	37 ^o 44 ^m
17	2 27 1 ^h 42 ^m	19 38 1 ^s	88 ^o 60 ^m	17	4 13 40 ^h 05 ^m	24 50 11 ^s	36 ^o 23 ^m
18	2 29 6 ^h 60 ^m	19 46 53 ^s	87 ^o 75 ^m	18	4 16 1 ^h 66 ^m	24 53 48 ^s	34 ^o 33 ^m
19	2 31 12 ^h 13 ^m	19 55 40 ^s	86 ^o 32 ^m	19	4 18 23 ^h 58 ^m	24 57 18 ^s	32 ^o 33 ^m
20	2 33 17 ^h 98 ^m	20 4 21 ^s	86 ^o 05 ^m	20	4 20 45 ^h 80 ^m	25 0 39 ^s	32 ^o 15 ^m
21	2 35 24 ^h 18 ^m	20 12 57 ^s	85 ^o 18 ^m	21	4 23 8 ^h 33 ^m	25 3 52 ^s	30 ^o 77 ^m
22	2 37 30 ^h 71 ^m	20 21 28 ^s	84 ^o 30 ^m	22	4 25 31 ^h 16 ^m	25 6 56 ^s	29 ^o 33 ^m
23	2 39 37 ^h 58 ^m	20 29 54 ^s	83 ^o 40 ^m	23	4 27 54 ^h 29 ^m	25 9 53 ^s	27 ^o 30 ^m
24	2 41 44 ^h 20 ^m	N. 20 32 15 ^s		24	4 30 17 ^h 70 ^m	N. 25 12 41 ^s	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10".	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10".
MONDAY 29.				WEDNESDAY 31.			
0	4 30 17.70	N.25 12 41.0	26.57	0	6 29 16.83	N.24 27 41.9	48.72
1	4 32 41.41	25 15 20.4	25.16	1	6 31 42.29	24 22 49.6	50.35
2	4 35 5.40	25 17 51.3	23.72	2	6 34 13.76	24 17 47.5	51.97
3	4 37 29.67	25 20 13.6	22.28	3	6 36 45.24	24 12 35.7	53.62
4	4 39 54.22	25 22 27.3	20.85	4	6 39 16.72	24 7 14.0	55.25
5	4 42 19.04	25 24 32.4	19.37	5	6 41 48.20	24 1 42.5	56.87
6	4 44 44.13	25 26 28.6	17.93	6	6 44 19.67	23 56 1.3	58.50
7	4 47 9.49	25 28 16.2	16.48	7	6 46 51.13	23 50 10.3	60.12
8	4 49 35.10	25 29 54.8	14.97	8	6 49 22.56	23 44 9.6	61.73
9	4 52 0.97	25 31 24.6	13.48	9	6 51 53.97	23 37 59.2	63.35
10	4 54 27.10	25 32 45.5	11.99	10	6 54 25.35	23 31 39.1	64.97
11	4 56 53.46	25 33 57.4	10.48	11	6 56 56.68	23 25 9.3	66.57
12	4 59 20.07	25 35 0.3	8.97	12	6 59 27.97	23 18 29.9	68.17
13	5 1 46.92	25 35 54.1	7.45	13	7 1 59.21	23 11 40.9	69.77
14	5 4 13.99	25 36 38.8	5.93	14	7 4 30.40	23 4 42.3	71.35
15	5 6 41.30	25 37 14.4	4.38	15	7 7 1.33	22 57 34.2	72.95
16	5 9 8.82	25 37 40.7	2.85	16	7 9 32.60	22 50 16.5	74.52
17	5 11 36.56	25 37 57.8	1.30	17	7 12 3.60	22 42 49.4	76.10
18	5 14 4.51	25 38 5.6	0.22	18	7 14 34.52	22 35 12.8	77.67
19	5 16 32.66	25 38 4.2	1.22	19	7 17 5.36	22 27 26.8	79.22
20	5 19 1.01	25 37 53.3	3.27	20	7 19 36.12	22 19 31.5	80.78
21	5 21 29.55	25 37 33.1	4.92	21	7 22 6.79	22 11 26.8	82.33
22	5 23 58.28	25 37 3.4	6.52	22	7 24 37.37	22 3 12.8	83.87
23	5 26 27.19	N.25 36 24.3	8.10	23	7 27 7.85	N.21 54 49.6	85.40
TUESDAY 30.				THURSDAY, SEPT. 1.			
0	5 28 56.27	N.25 35 35.7	9.68	0	7 29 38.23	N.21 46 17.2	
1	5 31 25.33	25 34 37.6	11.28				
2	5 33 54.94	25 33 29.9	12.88				
3	5 36 24.51	25 32 12.6	14.47				
4	5 38 54.24	25 30 45.8	16.10				
5	5 41 24.11	25 29 9.2	17.68				
6	5 43 54.11	25 27 23.1	19.22				
7	5 46 24.25	25 25 27.2	20.92				
8	5 48 54.52	25 23 21.7	22.55				
9	5 51 24.90	25 21 6.4	24.17				
10	5 53 55.40	25 18 41.4	25.80				
11	5 56 26.01	25 16 6.6	27.42				
12	5 58 56.71	25 13 22.1	29.05				
13	6 1 27.51	25 10 27.8	30.70				
14	6 3 58.41	25 7 23.6	32.32				
15	6 6 29.38	25 4 9.7	33.95				
16	6 9 0.43	25 0 46.0	35.60				
17	6 11 31.55	24 57 12.4	37.23				
18	6 14 2.74	24 53 29.0	38.88				
19	6 16 33.98	24 49 35.7	40.52				
20	6 19 5.27	24 45 32.6	42.15				
21	6 21 36.61	24 41 19.7	43.80				
22	6 24 7.99	24 36 56.9	45.43				
23	6 26 39.40	24 32 24.3	47.07				
24	6 29 10.83	N.24 27 41.9					

PHASES OF THE MOON.

- New Moon - - - d h m
 6 2 45.3
- ☽ First Quarter - - 12 17
- Full Moon - - - 20
- ☾ Last Quarter - - 28

- ☾ Perigee
- ☾ Apogee

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.	P.L. of diff.	XV ^b .	P.L. of diff.	XVIII ^b .	P.L. of diff.	XXI ^b .	P.L. of diff.
1	Fomalhaut W.	96 54 39	2958	98 25 44	2944	99 57 7	2930	101 28 48	2916
	α Pegasi W.	75 57 49	2696	77 34 35	2675	79 11 48	2655	80 49 29	2635
	α Arietis W.	32 35 32	2593	34 14 37	2570	35 54 13	2548	37 34 20	2525
	SUN E.	61 36 45	2865	60 3 41	2845	58 30 12	2825	56 56 17	2805
2	α Pegasi W.	89 4 34	2538	90 44 54	2520	92 25 40	2502	94 6 50	2485
	α Arietis W.	46 2 24	2422	47 45 28	2401	49 29 1	2382	51 13 2	2362
	SUN E.	49 0 13	2707	47 23 42	2687	45 46 45	2668	44 9 22	2649
3	α Pegasi W.	102 38 34	2405	104 22 1	2391	106 5 48	2378	107 49 54	2366
	α Arietis W.	59 59 58	2270	61 46 41	2254	63 33 49	2237	65 21 22	2221
	Aldebaran W.	28 27 16	2487	30 8 47	2447	31 51 15	2410	33 34 36	2376
	SUN E.	35 56 8	2558	34 16 16	2541	32 36 0	2524	30 55 20	2509
8	SUN W.	33 59 3	2382	35 43 47	2362	37 28 17	2371	39 12 33	2382
	Spica ♀ E.	32 1 20	2081	30 9 52	2094	28 18 43	2107	26 27 55	2122
	Antares E.	77 37 15	2057	75 45 9	2066	73 53 17	2075	72 1 40	2086
	Saturn E.	109 2 33	2044	107 10 7	2052	105 17 54	2062	103 25 56	2072
	Jupiter E.	114 34 16	2030	112 41 28	2039	110 48 54	2048	108 56 35	2059
9	SUN W.	47 49 52	2443	49 32 26	2456	51 14 41	2470	52 56 36	2484
	Spica ♀ E.	17 20 24	2229	15 32 39	2264	13 45 47	2309	12 0 1	2372
	Antares E.	62 47 48	2144	60 57 56	2157	59 8 24	2171	57 19 12	2184
	Saturn E.	94 10 18	2130	92 20 5	2143	90 30 12	2157	88 40 39	2170
	Jupiter E.	99 39 14	2117	97 48 41	2130	95 58 28	2143	94 8 35	2157
10	SUN W.	61 21 0	2561	63 0 48	2577	64 40 14	2594	66 19 17	2610
	Venus W.	22 35 12	2753	24 10 42	2754	25 46 10	2758	27 21 33	2765
	Antares E.	48 18 28	2257	46 31 25	2272	44 44 44	2287	42 58 26	2303
	Saturn E.	79 38 11	2243	77 50 47	2258	76 3 45	2273	74 17 6	2289
	Jupiter E.	85 4 27	2229	83 16 43	2244	81 29 21	2260	79 42 23	2275
11	SUN W.	74 28 52	2695	76 5 39	2711	77 42 4	2729	79 18 5	2746
	Venus W.	35 15 36	2918	36 49 41	2931	38 23 28	2945	39 56 58	2959
	Antares E.	34 12 38	2382	32 28 38	2398	30 45 0	2415	29 1 46	2430
	Saturn E.	65 29 33	2368	63 45 12	2382	62 1 12	2399	60 17 36	2415
	Jupiter E.	70 53 12	2354	69 8 31	2369	67 24 12	2385	65 40 16	2401
	α Aquilæ E.	89 18 13	2935	87 46 39	2953	86 15 27	2970	84 44 37	2989
12	SUN W.	87 12 37	2830	88 46 26	2847	90 19 53	2863	91 53 0	2880
	Venus W.	47 39 46	2933	49 11 23	2948	50 42 41	2963	52 13 7	2978
	Spica ♀ W.	25 25 35	2540	27 5 53	2551	28 45 55	2564	30 27 7	2577
	Saturn E.	51 45 13	2498	50 3 50	2509	48 22 49	2525	46 4 48	2540
	Jupiter E.	57 6 15	2480	55 24 33	2495	53 43 12	2510	52 1 4	2525
	α Aquilæ E.	77 16 43	3097	75 48 30	3121	74 20 46	3146	72 4 12	3170
13	SUN W.	99 33 22	2958	101 4 27	2973	102 35 1	2988	104 1 1	3003
	Venus W.	59 43 53	3052	61 13 1	3067	62 41 1	3082	64 1 1	3097
	Spica ♀ W.	38 40 5	2640	40 18 6	2653	41 5 1	2666	42 11 1	2679
	Saturn E.	38 24 3	2613	36 45 26	2627	35 1 1	2640	33 12 1	2653
	Jupiter E.	43 42 22	2598	42 3 24	2611	40 2 1	2624	38 13 1	2637
	α Aquilæ E.	65 45 36	3319	64 21 47	3353	62 5 1	3387	60 17 1	3421
14	SUN W.	111 33 29	3074	113 2 11	3086	114 3 1	3098	115 4 1	3110
	Venus W.	71 28 52	3163	72 55 45	3176	74 4 1	3188	75 17 1	3200

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	N ^o n.	P.L. of diff.	III ^h .			P.L. of diff.	VI ^h .	P.L. of diff.	IX ^h .			P.L. of diff.
				°	'	"				°	'	"	
14	Spica η W.	45 10 24	2691	46 47 16	2703	48 23 52	2716	50 0 11	2728				
	Saturn E.	31 51 30	2669	30 14 8	2683	23 37 6	2696	27 0 21	2710				
	Jupiter E.	37 8 21	2652	35 30 37	2665	33 53 10	2678	32 16 1	2690				
	Fomalhaut E.	83 51 18	2094	82 23 1	3111	80 55 5	3127	79 27 28	3144				
15	Sun W.	117 26 43	3185	118 54 23	3187	120 21 47	3149	121 48 57	3161				
	Venus W.	77 14 54	3218	78 40 48	3226	80 6 27	3237	81 31 53	3245				
	Spica η W.	57 57 54	2785	59 32 42	2795	61 7 16	2806	62 41 36	2817				
	Fomalhaut E.	72 14 42	3227	70 49 16	3256	69 24 13	3277	67 59 34	3298				
	α Pegasi E.	92 26 11	2923	90 54 21	2934	89 22 45	2945	87 51 23	2955				
16	Sun W.	129 1 21	3216	130 27 11	3226	131 52 49	3227	133 18 14	3247				
	Venus W.	68 33 48	3301	69 59 58	3311	91 23 57	3321	92 47 44	3330				
	Spica η W.	70 30 1	2854	72 3 6	2874	73 35 58	2882	75 8 40	2891				
	Antares W.	24 44 57	2860	26 18 7	2870	27 51 5	2878	29 23 52	2887				
	Fomalhaut E.	61 2 51	3417	59 40 54	3445	58 19 29	3473	56 58 35	3504				
α Pegasi E.	80 17 56	3010	78 47 56	3020	77 18 8	3031	75 48 34	3042					
17	Venus W.	99 44 4	3373	101 6 51	3381	102 29 29	3390	103 51 57	3397				
	Spica η W.	82 49 30	2980	84 21 11	2988	85 52 42	2944	87 24 5	2951				
	Antares W.	37 5 12	2925	38 36 59	2982	40 8 37	2989	41 40 7	2946				
	Fomalhaut E.	50 23 2	3682	49 5 56	3726	47 49 36	3772	46 34 5	3823				
	α Pegasi E.	68 24 4	3096	66 55 50	3108	65 27 50	3119	64 0 4	3131				
18	Antares W.	49 13 30	2977	50 46 12	2982	52 16 47	2987	53 47 16	2993				
	Saturn W.	18 18 27	2977	19 49 9	2981	21 19 46	2985	22 50 18	2988				
	Fomalhaut E.	40 30 49	4146	39 21 32	4231	38 13 35	4323	37 7 4	4428				
	α Pegasi E.	56 44 51	3194	55 18 34	3207	53 52 33	3222	52 26 50	3237				
	α Arietis E.	98 37 25	2992	97 7 2	2998	95 36 47	3003	94 6 38	3008				
19	Antares W.	61 18 3	3017	62 47 53	3020	64 17 43	3025	65 47 25	3029				
	Saturn W.	30 21 45	3008	31 51 48	3012	33 21 46	3016	34 51 39	3019				
	α Pegasi E.	45 22 59	3326	43 59 17	3347	42 36 0	3371	41 13 10	3396				
	α Arietis E.	86 37 25	3032	85 7 52	3037	83 38 25	3040	82 9 2	3044				
20	Antares W.	73 14 46	3048	74 44 3	3049	76 13 13	3051	77 42 25	3054				
	Saturn W.	42 20 1	3035	43 49 30	3038	45 18 55	3040	46 48 18	3044				
	Jupiter W.	37 10 40	3022	38 40 25	3026	40 10 5	3028	41 39 43	3032				
	α Pegasi E.	34 27 6	3566	33 7 54	3611	31 49 32	3663	30 32 5	3723				
	α Arietis E.	74 43 20	3063	73 14 25	3065	71 45 33	3069	70 16 46	3072				
21	Antares W.	85 7 25	3065	86 36 18	3067	88 5 8	3069	89 33 57	3069				
	Saturn W.	54 14 24	3054	55 43 30	3056	57 12 34	3057	58 41 36	3059				
	Jupiter W.	49 7 0	3043	50 36 20	3045	52 5 37	3046	53 34 53	3048				
	α Arietis E.	62 53 40	3086	61 25 13	3087	59 56 48	3089	58 28 25	3091				
	Aldebaran E.	95 29 58	3118	94 2 10	3119	92 34 23	3121	91 6 39	3122				
22	Saturn W.	66 6 27	3062	67 35 23	3062	69 4 19	3062	70 38 14	3062				
	Jupiter W.	61 0 48	3052	62 29 57	3053	63 59 4	3052	65 28 12	3052				
	α Aquilæ W.	49 8 53	4186	50 18 20	4092	51 28 29	4049	52 39 20	4012				
	α Arietis E.	51 7 7	3101	49 38 58	3101	48 10 50	3104	46 42 45	3104				
	Aldebaran E.	83 48 16	3127	82 20 39	3128	80 53 3	3127	79 25 26	3128				
23	Saturn W.	77 58 0	3059	79 27 0	3056	80 56 3	3055	82 25 8	3053				

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.	P.L. of diff.	XV ^h .	P.L. of diff.	XVIII ^h .	P.L. of diff.	XXI ^h .	P.L. of diff.
14	Spica η W.	51 36 14	2739	53 18 2	2751	54 47 34	2763	56 22 51	2773
	Saturn E.	25 23 54	2724	23 47 46	2787	22 11 55	2750	20 36 21	2763
	Jupiter E.	30 39 8	2703	29 2 32	2716	27 26 13	2727	25 50 9	2739
	Fomalhaut E.	78 0 12	3162	76 33 17	3179	75 6 43	3198	73 40 32	3217
15	SUN W.	123 15 53	3173	124 42 35	3184	126 9 3	3194	127 35 19	3206
	Venus W.	82 57 5	3259	84 22 5	3270	85 46 52	3281	87 11 26	3291
	Spica η W.	64 15 42	2826	65 49 36	2836	67 23 17	2846	68 56 45	2856
	Fomalhaut E.	66 35 29	3320	68 11 32	3344	63 48 11	3369	62 25 17	3392
	α Pegasi E.	86 20 14	2966	84 49 19	2977	83 18 38	2989	81 48 11	2998
16	SUN W.	134 43 28	3257	136 8 30	3266	137 33 21	3276	138 58 1	3285
	Venus W.	94 11 21	3339	95 34 47	3349	96 58 2	3357	98 21 8	3365
	Spica η W.	76 41 10	2899	78 13 30	2907	79 45 40	2915	81 17 40	2923
	Antares W.	30 56 28	2894	32 28 54	2902	34 1 10	2910	35 33 16	2918
	Fomalhaut E.	55 38 15	3235	54 18 29	3269	52 59 20	3264	51 49 50	3243
	α Pegasi E.	74 19 13	3052	72 50 6	3064	71 21 12	3074	69 52 31	3086
17	Venus W.	105 14 17	3405	106 36 28	3411	107 58 32	3419	109 20 27	3425
	Spica η W.	88 55 19	2958	90 26 25	2964	91 57 23	2971	93 28 12	2976
	Antares W.	43 11 27	2952	44 42 40	2959	46 13 44	2965	47 44 41	2971
	Fomalhaut E.	45 19 27	3276	44 5 43	3236	42 53 0	4000	41 41 20	4070
	α Pegasi E.	62 32 32	3142	61 5 15	3154	59 38 11	3167	58 11 23	3181
18	Antares W.	55 17 37	2998	56 47 52	3002	58 18 2	3008	59 48 5	3012
	Saturn W.	24 20 46	2993	25 51 8	2996	27 21 26	3001	28 51 38	3005
	Fomalhaut E.	36 2 8	4841	34 58 52	4670	33 57 27	4814	32 58 2	4975
	α Pegasi E.	51 1 25	3253	49 36 18	3270	48 11 31	3287	46 47 4	3306
	α Arietis E.	92 36 35	3012	91 6 38	3018	89 36 48	3023	88 7 4	3027
19	Antares W.	67 17 2	3033	68 46 34	3035	70 16 3	3039	71 45 27	3043
	Saturn W.	36 21 28	3023	37 51 12	3026	39 20 52	3029	40 50 29	3033
	α Pegasi E.	39 50 49	3423	38 28 59	3454	37 7 43	3487	35 47 4	3524
	α Arietis E.	80 39 44	3049	79 10 32	3052	77 41 23	3056	76 12 20	3059
20	Antares W.	79 11 31	3057	80 40 33	3059	82 9 33	3061	83 38 30	3063
	Saturn W.	48 17 36	3046	49 46 52	3048	51 16 5	3050	52 45 16	3052
	Jupiter W.	43 9 16	3034	44 38 47	3037	46 8 14	3039	47 37 38	3041
	α Pegasi E.	29 15 42	3791	28 0 30	3858	26 46 38	3959	25 34 18	4065
	α Arietis E.	68 48 2	3074	67 19 21	3078	65 50 44	3081	64 22 11	3082
21	Antares W.	91 2 44	3070	92 31 30	3071	94 0 15	3072	95 28 59	3073
	Saturn W.	60 10 36	3059	61 39 36	3061	63 8 34	3061	64 37 31	3061
	Jupiter W.	55 4 7	3049	56 33 19	3050	58 2 30	3051	59 31 19	3051
	α Arietis E.	57 0 5	3093	55 31 47	3096	54 3 32	3097	52 35 19	3097
	Aldebaran E.	89 38 56	3124	88 11 15	3124	86 43 34	3128	85 15 55	3128
	Saturn W.	72 2 10	3062	73 31 6	3061	75 0 3	3061	76 29 1	3061
22	Jupiter W.	66 57 20	3052	68 26 28	3052	69 55 37	3052	71 24 46	3052
	α Aquilæ W.	53 50 48	3976	55 2 51	3943	56 15 27	3943	57 28 34	3943
	α Arietis E.	45 14 40	3105	43 46 37	3107	42 18 31	3107	40 59 36	3107
	Aldebaran E.	77 57 50	3129	76 30 15	3128	75 2 2	3128	73 35 3	3128
	Saturn W.	83 54 15	3051	85 23 25	3048	86 52 2	3048	88 21 1	3048

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		LUNAR DISTANCES.																																																																					
			Noon.	P.L. of diff.	III ^h .	P.L. of diff.	VI ^h .	P.L. of diff.	IX ^h .	P.L. of diff.																																																														
			° ' "		° ' "		° ' "		° ' "		° ' "		° ' "		° ' "		° ' "		° ' "		° ' "		° ' "																																																	
23	Jupiter	W.	72 53 57	3049	74 23 9	3048	75 52 23	3046	77 21 39	3044	α Aquilæ	W.	58 42 10	3857	59 56 14	3832	61 10 43	3809	62 25 36	3787	α Arietis	E.	39 22 38	3110	37 54 41	3112	36 26 46	3114	34 58 53	3115	Aldebaran	E.	72 7 27	3128	70 39 51	3127	69 12 14	3126	67 44 36	3125																																
	24	Saturn	W.	89 51 15	3039	91 20 40	3026	92 50 8	3031	94 19 42	3028	Jupiter	W.	84 48 41	3031	86 18 16	3027	87 47 55	3023	89 17 39	3019	α Aquilæ	W.	68 45 22	3694	70 2 16	3678	71 19 27	3663	72 36 54	3649	Fomalhaut	W.	44 12 0	3970	45 24 9	3920	46 37 8	3874	47 50 54	3832	Aldebaran	E.	60 26 10	3119	58 58 25	3119	57 30 38	3117	56 2 49	3115	Pollux	E.	102 18 39	3080	100 50 5	3076	99 21 26	3072	97 52 42	3067	SUN	E.	142 34 4	3433	141 12 25	3429	139 50 41	3423	138 28 51	3418	
		25	Saturn	W.	101 48 54	3002	103 19 4	2997	104 49 21	2990	106 19 47	2983	Jupiter	W.	96 47 43	2994	98 18 3	2988	99 48 31	2982	101 19 6	2975	α Aquilæ	W.	79 7 46	3588	80 26 37	3574	81 45 40	3564	83 4 54	3553	Fomalhaut	W.	54 9 49	3657	55 27 22	3628	56 45 26	3600	58 4 0	3574	Aldebaran	E.	48 43 16	3108	47 15 16	3106	45 47 14	3105	44 19 10	3105	Pollux	E.	90 27 33	3041	88 58 11	3035	87 28 41	3029	85 59 4	3022	SUN	E.	131 38 5	3387	130 15 34	3380	128 52 55	3372	127 30 7	3365
			26	α Aquilæ	W.	89 43 52	3506	91 4 10	3498	92 24 37	3489	93 45 13	3481	Fomalhaut	W.	64 43 38	3459	66 4 48	3438	67 26 22	3417	68 48 19	3399	α Pegasi	W.	42 13 23	3285	43 37 52	3258	45 2 53	3232	46 28 24	3208	Aldebaran	E.	36 58 48	3107	35 30 47	3110	34 2 50	3115	32 34 58	3121	Pollux	E.	78 28 46	2984	76 58 13	2975	75 27 29	2967	73 56 35	2958	SUN	E.	120 33 50	3321	119 10 3	3312	117 46 5	3301	116 21 55	3291									
27				Fomalhaut	W.	75 43 23	3307	77 7 26	3290	78 31 49	3273	79 56 32	3257	α Pegasi	W.	53 42 54	3099	55 11 5	3078	56 39 41	3058	58 8 42	3038	Pollux	E.	66 19 3	2908	64 46 54	2897	63 14 31	2886	61 41 54	2874	SUN	E.	109 17 53	3233	107 52 23	3220	106 26 37	3206	105 0 35	3193																													
				28	Fomalhaut	W.	87 4 51	3178	88 31 26	3163	89 58 20	3148	91 25 31	3133	α Pegasi	W.	65 39 41	2944	67 11 4	2925	68 42 51	2908	70 15 0	2888	α Arietis	W.	22 4 18	2880	23 37 3	2852	25 10 24	2826	26 44 18	2801	Pollux	E.	53 55 5	2815	52 20 57	2802	50 46 32	2790	49 11 51	2777	SUN	E.	97 46 18	3120	96 18 33	3105	94 50 29	3088	93 22 5	3072																		
					29	α Pegasi	W.	78 1 45	2797	79 36 17	2779	81 11 13	2760	82 46 34	2742	α Arietis	W.	34 41 24	2693	36 18 14	2672	37 55 31	2652	39 33 16	2632	Pollux	E.	41 14 19	2716	39 38 0	2704	38 1 26	2693	36 24 37	2683	SUN	E.	85 54 59	2987	84 24 30	2968	82 53 37	2950	81 22 22	2932																											
	30					α Pegasi	W.	90 49 19	2651	92 27 5	2634	94 5 14	2616	95 43 47	2598	α Arietis	W.	47 48 47	2533	49 29 15	2514	51 10 9	2493	52 51 32	2474	Aldebaran	W.	17 14 47	3137	18 42 12	3016	20 12 5	2920	21 43 59	2838	Pollux	E.	28 17 31	2649	26 39 43	2650	25 1 56	2655	23 24 15	2663	SUN	E.	73 40 12	2838	72 6 33	2818	70 32 29	2799	68 58 0	2779																	
31		α Arietis				W.	61 25 11	2379	63 9 16	2360	64 53 49	2341	66 38 49	2322	Aldebaran	W.	29 45 30	2569	31 25 8	2531	33 5 38	2495	34 46 58	2462	SUN	E.	60 59 14	2684	59 22 12	2664	57 44 44	2646	56 6 52	2627																																						

CONFIGURATIONS OF THE SATELLITES OF JUPITER,

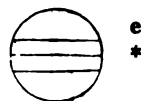
At 9^h 30^m, MEAN TIME.

Day of the Month.	West.			East.		
1	·1 ●		3·	○	2·	4·
2		2·		1· ○		4· ○ 2·
3			·3 ·2	○	·1	4·
4	·3 ●		1·	○ 4·	·2	
5			4·	○	1· 2·	·3
6		4·	2·	·1 ○		3·
7		4·		·2 ○	1·	3·
8		4·		2· ○		·2 ● ·1
9		·4	3·	1· 2· ○		
10		·4	·3 ·2	○	·1	
11			·4	1· ○	·3 ·2	
12				·4 ○	1· 2·	·3
13				2· 1· ○	·4	3·
14				·2 ○	1·	3· ·4
15				3· ·1 ○	·2	·4
16	1· ○		3·	○	2·	·4
17			·3 ·2	○	·1	4·
18	·2 ●			1· ·3 ○		4·
19				○	·1 2· 3·	4·
20				1· 2· ○	4·	3·
21				·2 4· ○	1·	3·
22			4·	1· 3· ○	·2	
23		4·	3·	○	1·	2·
24		4·	·2 2·	○		● ·1
25		·4		·3 1· ○		● ·2
26		·4		○	·1 2· 3·	
27		·4		1· 2· ○		·3
28			·4 ·2	○	1·	3·
29	3· ○			·1 4· ○	·2	
30			3·	○	1· 2·	·4
31			·2 2·	○		·4 ● ·1

This Table represents, at 9^h 30^m after *Mean Noon* of each day of the month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page; the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the numeral. A white circle (○) at the left or right hand of the page, denotes that the Satellite placed by the side of it is on the disc of Jupiter, and a black circle (●) that it is either *behind* the disc, or in the shadow, of Jupiter.

ECLIPSES OF THE SATELLITES OF JUPITER.

SATELLITE.	Day of the Month.	Mean Time.	Sidereal Time.	PHASE as seen in an inverting Telescope.
I.	1*	10 32 45 ^{h m s} ·9	19 13 13 ^{h m s} ·8	Em.
	3	5 1 36 ^{h m s} ·7	13 49 3 ^{h m s} ·3	Em.
	4	23 30 19 ^{h m s} ·8	8 24 45 ^{h m s} ·2	Em.
	6	17 59 10 ^{h m s} ·5	3 0 34 ^{h m s} ·6	Em.
	8*	12 27 56 ^{h m s} ·2	21 36 19 ^{h m s} ·0	Em.
	10	6 56 48 ^{h m s} ·3	16 12 9 ^{h m s} ·8	Em.
	12	1 25 32 ^{h m s} ·7	10 47 52 ^{h m s} ·9	Em.
	13	19 54 24 ^{h m s} ·5	5 23 43 ^{h m s} ·4	Em.
	15	14 23 11 ^{h m s} ·4	23 59 29 ^{h m s} ·0	Em.
	17*	8 52 4 ^{h m s} ·6	18 35 20 ^{h m s} ·9	Em.
	19	3 20 50 ^{h m s} ·2	13 11 5 ^{h m s} ·2	Em.
	20	21 49 42 ^{h m s} ·8	7 46 56 ^{h m s} ·5	Em.
	22	16 18 30 ^{h m s} ·7	2 22 43 ^{h m s} ·1	Em.
	24*	10 47 24 ^{h m s} ·7	20 58 35 ^{h m s} ·9	Em.
	26	5 16 11 ^{h m s} ·4	15 34 21 ^{h m s} ·3	Em.
	27	23 45 4 ^{h m s} ·7	10 10 13 ^{h m s} ·3	Em.
	29	18 13 53 ^{h m s} ·6	4 46 0 ^{h m s} ·9	Em.
31	12 42 48 ^{h m s} ·4	23 21 54 ^{h m s} ·3	Em.	
II.	4	5 43 11 ^{h m s} ·9	14 34 42 ^{h m s} ·0	Em.
	7	19 0 48 ^{h m s} ·7	4 6 19 ^{h m s} ·4	Em.
	11†	8 18 27 ^{h m s} ·2	17 37 58 ^{h m s} ·6	Em.
	14	21 36 9 ^{h m s} ·9	7 9 42 ^{h m s} ·0	Em.
	18*	10 53 54 ^{h m s} ·6	20 41 27 ^{h m s} ·5	Em.
	22	0 11 42 ^{h m s} ·6	10 13 16 ^{h m s} ·3	Em.
	25	13 29 34 ^{h m s} ·0	23 45 8 ^{h m s} ·3	Em.
29	2 47 27 ^{h m s} ·8	13 17 2 ^{h m s} ·8	Em.	
III.	4*	12 49 37 ^{h m s} ·2	21 42 17 ^{h m s} ·3	Em.
	11	16 50 14 ^{h m s} ·6	2 11 10 ^{h m s} ·2	Em.
	18	17 30 50 ^{h m s} ·6	3 19 22 ^{h m s} ·6	Im.
	18	20 51 4 ^{h m s} ·0	6 40 14 ^{h m s} ·9	Em.
	25	21 31 46 ^{h m s} ·4	7 48 40 ^{h m s} ·0	Im.
26	0 52 36 ^{h m s} ·8	11 10 3 ^{h m s} ·3	Em.	
IV.	13	3 58 9 ^{h m s} ·6	13 24 51 ^{h m s} ·4	Im.
	13†	7 32 36 ^{h m s} ·1	16 59 53 ^{h m s} ·1	Em.
	29	22 1 54 ^{h m s} ·8	8 34 39 ^{h m s} ·5	Im.
	30	1 43 21 ^{h m s} ·5	12 16 42 ^{h m s} ·6	Em.



APPROXIMATE SIDEREAL TIMES
OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER,
AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.						TRANSITS OF SATELLITES.						TRANSITS OF SHADOWS.					
	Immersion.			Emersion.			Ingress.			Egress.			Ingress.			Egress.		
	d	h	m	d	h	m	d	h	m	d	h	m	d	h	m	d	h	m
I.	1	16	23				2	13	37	2	15	56	2	14	11	2†	16	30
	3	10	57				3	8	10	4	10	30	3	8	47	4	11	6
	4	5	30				5	2	44	5	5	3	5	3	22	5	5	42
	6	0	4				7*	21	17	7	23	36	7†	21	58	7	0	17
	8*	18	37				9	15	51	9*	18	10	9	16	34	9*	18	53
	10	13	11				11	10	24	11	12	43	11	11	9	11	13	29
	11	7	44		In		12	4	58	12	7	17	12	5	45	12	8	4
	13	2	18				14	23	31	14	1	50	14	0	21	14	2	40
	15*	20	52		the		16*	18	5	16*	20	24	16*	18	56	16*	21	16
	17	15	26				18	12	39	18	14	58	18	13	32	18	15	51
	19	10	0				19	7	12	19	9	32	19	8	8	20	10	27
	20	4	34		Shadow.		21	1	46	21	4	6	21	2	43	21	5	3
	22	23	8				23*	20	20	23†	22	40	23*	21	19	23	23	38
	24†	17	42				25	14	55	25	17	14	25	15	55	25*	18	14
	26	12	16				26	9	29	27	11	48	27	10	30	27	12	50
	27	6	50				28	4	3	28	6	22	28	5	6	28	7	25
	29	1	25				30†	22	37	30	0	56	30	23	42	30	2	1
31*	19	59																
II.	4	10	32				2	16	5	2*	18	59	2†	17	12	2*	20	7
	7	23	54				5	5	30	5	8	23	5	6	46	6	9	40
	11	13	17		In		9*	18	53	9†	21	47	9*	20	18	9	23	12
	14	2	41				12	8	18	13	11	12	13	9	51	13	12	46
	18	16	4		the		16†	21	42	16	0	36	16	23	24	16	2	18
	21	5	29				20	11	8	20	14	2	20	12	57	20	15	52
	25*	18	54		Shadow.		23	0	34	23	3	27	23	2	30	23	5	24
	28	8	19				27	14	0	27	16	54	27	16	3	27*	18	58
						30	3	27	30	6	20	30	5	35	30	8	30	
III.	4	15	50		In the		7	5	55	8	9	22	7	8	41	8	12	10
	11*	19	42		Shadow.		15	9	48	15	13	16	15	13	9	15	16	39
	18	23	38	18	3	6	22	13	46	22†	17	14	22†	17	37	22*	21	7
	25	3	39	25	7	7	29†	17	48	29*	21	16	29†	22	5	29	1	36
IV.	12	6	1	13	9	35	4	23	21	4	2	55	4	5	0	4	8	40
	29†	22	36	29	2	12	21	15	34	21*	19	9	21	0	11	21	3	59

Day of the Month.	For correcting the Places of the Fixed Stars.				Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0 ^h .567309.	From Mean Noon of January 1.		
	At Mean Midnight,						Days.	Day of the Year.	Fraction of the Year.
	Logarithm of								
	A	B	C	D					
1	+1 ^o 0723	-1 ^o 1979	+9 ^o 9672	-0 ^o 4872	^h 15 ^m 18 ^s 45 ^o 06	131	212	580	
2	1 ^o 0811	1 ^o 1918	9 ^o 9686	0 ^o 4886	15 14 49 ^o 15	132	213	583	
3	1 ^o 0895	1 ^o 1856	9 ^o 9700	0 ^o 4900	15 10 53 ^o 24	133	214	586	
4	+1 ^o 0977	-1 ^o 1791	+9 ^o 9714	-0 ^o 4915	15 6 57 ^o 33	134	215	589	
5	1 ^o 1056	1 ^o 1725	9 ^o 9727	0 ^o 4929	15 3 1 ^o 42	135	216	591	
6	1 ^o 1133	1 ^o 1656	9 ^o 9740	0 ^o 4943	14 59 5 ^o 51	136	217	594	
7	+1 ^o 1207	-1 ^o 1584	+9 ^o 9754	-0 ^o 4958	14 55 9 ^o 60	137	218	597	
8	1 ^o 1278	1 ^o 1510	9 ^o 9767	0 ^o 4972	14 51 13 ^o 69	138	219	600	
9	1 ^o 1347	1 ^o 1434	9 ^o 9780	0 ^o 4986	14 47 17 ^o 78	139	220	602	
10	+1 ^o 1414	-1 ^o 1355	+9 ^o 9792	-0 ^o 5000	14 43 21 ^o 87	140	221	605	
11	1 ^o 1479	1 ^o 1273	9 ^o 9805	0 ^o 5014	14 39 25 ^o 96	141	222	608	
12	1 ^o 1542	1 ^o 1188	9 ^o 9817	0 ^o 5028	14 35 30 ^o 05	142	223	611	
13	+1 ^o 1602	-1 ^o 1100	+9 ^o 9829	-0 ^o 5041	14 31 34 ^o 14	143	224	613	
14	1 ^o 1661	1 ^o 1010	9 ^o 9841	0 ^o 5055	14 27 38 ^o 23	144	225	616	
15	1 ^o 1717	1 ^o 0916	9 ^o 9853	0 ^o 5068	14 23 42 ^o 32	145	226	619	
16	+1 ^o 1772	-1 ^o 0819	+9 ^o 9865	-0 ^o 5081	14 19 46 ^o 41	146	227	621	
17	1 ^o 1825	1 ^o 0718	9 ^o 9876	0 ^o 5093	14 15 50 ^o 51	147	228	624	
18	1 ^o 1876	1 ^o 0613	9 ^o 9888	0 ^o 5106	14 11 54 ^o 60	148	229	627	
19	+1 ^o 1925	-1 ^o 0505	+9 ^o 9899	-0 ^o 5118	14 7 58 ^o 69	149	230	630	
20	1 ^o 1972	1 ^o 0393	9 ^o 9910	0 ^o 5129	14 4 2 ^o 78	150	231	632	
21	1 ^o 2018	1 ^o 0276	9 ^o 9921	0 ^o 5141	14 0 6 ^o 87	151	232	635	
22	+1 ^o 2062	-1 ^o 0155	+9 ^o 9932	-0 ^o 5152	13 56 10 ^o 96	152	233	638	
23	1 ^o 2104	1 ^o 0029	9 ^o 9943	0 ^o 5162	13 52 15 ^o 05	153	234	641	
24	1 ^o 2145	0 ^o 9897	9 ^o 9953	0 ^o 5172	13 48 19 ^o 14	154	235	643	
25	+1 ^o 2184	-0 ^o 9760	+9 ^o 9964	-0 ^o 5182	13 44 23 ^o 24	155	236	646	
26	1 ^o 2222	0 ^o 9618	9 ^o 9974	0 ^o 5191	13 40 27 ^o 34	156	237	649	
27	1 ^o 2258	0 ^o 9470	9 ^o 9984	0 ^o 5199	13 36 31 ^o 44	157	238	652	
28	+1 ^o 2293	-0 ^o 9315	+9 ^o 9994	-0 ^o 5207	13 32 35 ^o 54	158	239	654	
29	1 ^o 2326	0 ^o 9152	0 ^o 0004	0 ^o 5215	13 28 39 ^o 64	159	240	657	
30	1 ^o 2358	0 ^o 8982	0 ^o 0014	0 ^o 5222	13 24 43 ^o 74	160	241	660	
31	1 ^o 2388	0 ^o 8804	0 ^o 0024	0 ^o 5228	13 20 47 ^o 84	161	242	663	
32	+1 ^o 2417	-0 ^o 8617	+0 ^o 0033	0 ^o 5234	13 16 51 ^o 94	162	243	665	

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, to be subtracted from Apparent Time.		Diff. for 1 hour.
		Apparent Right Ascension.	Diff. for 1 hour.	Apparent Declination.	Diff. for 1 hour.		m	s	
Thur.	1	h m s 10 40 51.62	s 9.073	o ' " N.8 21 25.5	" 54.61	m s 1 4.37	m s 0 5.58	s 0.731	
Frid.	2	10 44 29.38	9.062	7 59 34.8	54.94	1 4.33	0 24.33	0.732	
Sat.	3	10 48 6.86	9.051	7 37 36.3	55.25	1 4.29	0 43.35	0.733	
Sun.	4	10 51 44.08	9.041	7 15 30.3	55.55	1 4.25	1 2.63	0.733	
Mon.	5	10 55 21.06	9.032	6 53 17.2	55.83	1 4.21	1 22.14	0.733	
Tues.	6	10 58 57.82	9.023	6 30 57.8	56.10	1 4.18	1 41.89	0.732	
Wed.	7	11 2 34.35	9.014	6 8 31.0	56.35	1 4.15	2 1.85	0.740	
Thur.	8	11 6 10.68	9.006	5 45 58.7	56.58	1 4.12	2 22.02	0.740	
Frid.	9	11 9 46.83	8.999	5 23 20.7	56.81	1 4.10	2 42.37	0.734	
Sat.	10	11 13 22.81	8.993	5 0 37.3	57.01	1 4.08	3 2.89	0.761	
Sun.	11	11 16 58.63	8.987	4 37 49.0	57.21	1 4.06	3 23.56	0.761	
Mon.	12	11 20 34.32	8.982	4 14 56.0	57.39	1 4.04	3 44.38	0.772	
Tues.	13	11 24 9.89	8.978	3 51 58.6	57.56	1 4.03	4 5.30	0.776	
Wed.	14	11 27 45.36	8.975	3 28 57.2	57.71	1 4.02	4 26.33	0.779	
Thur.	15	11 31 20.75	8.973	3 5 52.1	57.86	1 4.02	4 47.43	0.781	
Frid.	16	11 34 56.09	8.972	2 42 43.5	57.98	1 4.02	5 8.58	0.783	
Sat.	17	11 38 31.41	8.972	2 19 31.9	58.10	1 4.01	5 29.76	0.783	
Sun.	18	11 42 6.72	8.972	1 56 17.4	58.20	1 4.01	5 50.95	0.782	
Mon.	19	11 45 42.03	8.974	1 33 0.6	58.30	1 4.02	6 12.13	0.789	
Tues.	20	11 49 17.40	8.976	1 9 41.5	58.37	1 4.03	6 33.25	0.779	
Wed.	21	11 52 52.83	8.979	0 46 20.6	58.44	1 4.04	6 54.32	0.775	
Thur.	22	11 56 28.33	8.984	N.0 22 58.1	58.48	1 4.05	7 15.32	0.770	
Frid.	23	12 0 3.95	8.990	S.0 0 25.5	58.52	1 4.07	7 36.19	0.764	
Sat.	24	12 3 39.71	8.997	0 23 50.1	58.55	1 4.09	7 56.93	0.758	
Sun.	25	12 7 15.63	9.004	0 47 15.2	58.56	1 4.11	8 17.51	0.750	
Mon.	26	12 10 51.71	9.013	1 10 40.6	58.55	1 4.13	8 37.92	0.743	
Tues.	27	12 14 28.01	9.022	1 34 5.8	58.54	1 4.16	8 58.12	0.732	
Wed.	28	12 18 4.54	9.032	1 57 30.7	58.50	1 4.19	9 18.09	0.728	
Thur.	29	12 21 41.30	9.043	2 20 54.6	58.45	1 4.22	9 37.83	0.711	
Frid.	30	12 25 18.33	9.054	2 44 17.4	58.38	1 4.26	9 57.30	0.700	
Sat.	31	12 28 55.63		S.3 7 38.5		1 4.30	10 16.49		

* Mean Time of the Semidiameter passing may be found by subtracting 0^m.18 from the Sidereal Time.

AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S			Equation of Time, to be added to Mean Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semidiam.*		
Thur.	1	h m s 10 40 51·64	N. ° ' " 8 21 25·4	' " 15 52·7	m s 0 5·58	h m s 10 40 57·22
Frid.	2	10 44 29·44	7 59 34·4	15 52·9	0 24·33	10 44 53·77
Sat.	3	10 48 6·97	7 37 35·6	15 53·2	0 43·36	10 48 50·33
Sun.	4	10 51 44·24	7 15 29·3	15 53·4	1 2·64	10 52 46·88
Mon.	5	10 55 21·27	6 53 15·9	15 53·7	1 22·16	10 56 43·43
Tues.	6	10 58 58·08	6 30 55·7	15 53·9	1 41·91	11 0 39·99
Wed.	7	11 2 34·66	6 8 29·1	15 54·2	2 1·88	11 4 36·54
Thur.	8	11 6 11·04	5 45 26·5	15 54·4	2 22·05	11 8 33·09
Frid.	9	11 9 47·24	5 23 18·2	15 54·7	2 42·41	11 12 29·65
Sat.	10	11 13 23·27	5 0 34·5	15 54·9	3 2·93	11 16 26·20
Sun.	11	11 16 59·14	4 37 45·8	15 55·2	3 23·61	11 20 22·75
Mon.	12	11 20 34·88	4 14 52·4	15 55·4	3 44·43	11 24 19·31
Tues.	13	11 24 10·50	3 51 54·6	15 55·7	4 5·36	11 28 15·86
Wed.	14	11 27 46·02	3 28 52·9	15 55·9	4 26·39	11 32 12·41
Thur.	15	11 31 21·47	3 5 47·4	15 56·2	4 47·50	11 36 8·97
Frid.	16	11 34 56·86	2 42 38·6	15 56·4	5 8·66	11 40 5·52
Sat.	17	11 38 32·23	2 19 26·6	15 56·7	5 29·84	11 44 2·07
Sun.	18	11 42 7·59	1 56 11·8	15 56·9	5 51·03	11 47 58·62
Mon.	19	11 45 42·96	1 32 54·5	15 57·2	6 12·22	11 51 55·18
Tues.	20	11 49 18·38	1 9 35·1	15 57·5	6 33·35	11 55 51·73
Wed.	21	11 52 53·86	0 46 13·9	15 57·8	6 54·42	11 59 48·28
Thur.	22	11 56 29·42	N. 0 22 51·1	15 58·0	7 15·42	12 3 44·84
Frid.	23	12 0 5·09	S. 0 0 33·0	15 58·3	7 36·30	12 7 41·39
Sat.	24	12 3 40·90	0 23 57·9	15 58·5	7 57·04	12 11 37·94
Sun.	25	12 7 16·87	0 47 23·3	15 58·8	8 17·63	12 15 34·50
Mon.	26	12 10 53·01	1 10 49·0	15 59·1	8 38·04	12 19 31·05
Tues.	27	12 14 29·36	1 34 14·6	15 59·3	8 58·24	12 23 27·60
Wed.	28	12 18 5·94	1 57 39·7	15 59·6	9 18·44	12 27 24·16
Thur.	29	12 21 42·75	2 21 4·0	15 59·9	9 39·04	12 31 20·71
Frid.	30	12 25 19·83	2 44 27·1	16 0·2	9 59·24	12 35 17·26
Sat.	31	12 28 57·18	S. 3 7 48·5	16 0·5	10 19·44	12 39 13·81

MEAN TIME.

THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S			
Longitude.	Latitude.		Semidiameter.		Horizontal Parallax.	
Noon.	Noon.	Noon.	Noon.	Midnight.	Noon.	Midnight.
158° 35' 16" .4	S. 0° 34'	0.0037244	16' 14" .6	16' 21" .5	59' 36" .6	60' 1" .9
159 33 25 .9	0 .47	0.0036199	16 27 .8	16 33 .2	60 24 .9	60 44 .7
160 31 37 .2	0 .59	0.0035138	16 37 .6	16 40 .8	61 0 .9	61 12 .7
161 29 50 .4	0 .69	0.0034060	16 42 .7	16 43 .3	61 19 .8	61 22 .0
162 28 5 .5	0 .77	0.0032965	16 42 .5	16 40 .3	61 18 .9	61 11 .0
163 26 22 .3	0 .83	0.0031854	16 36 .9	16 32 .3	60 58 .5	60 41 .6
164 24 40 .8	0 .86	0.0030728	16 26 .8	16 20 .3	60 21 .2	59 57 .6
165 23 0 .9	0 .86	0.0029586	16 13 .3	16 8 .8	59 31 .6	59 4 .2
166 21 22 .7	0 .82	0.0028431	15 58 .1	15 50 .3	58 36 .0	58 7 .4
167 19 46 .1	0 .75	0.0027264	15 42 .7	15 35 .2	57 39 .3	57 11 .9
168 18 11 .0	0 .66	0.0026087	15 28 .0	15 21 .3	56 45 .6	56 20 .9
169 16 37 .5	0 .55	0.0024900	15 15 .1	15 9 .4	55 58 .1	55 37 .3
170 15 5 .6	0 .43	0.0023705	15 4 .3	14 59 .7	55 18 .4	55 1 .7
171 13 35 .2	0 .29	0.0022504	14 55 .7	14 52 .2	54 47 .0	54 34 .3
172 12 6 .5	0 .16	0.0021298	14 49 .4	14 47 .0	54 23 .8	54 15 .0
173 10 39 .5	S. 0° 04'	0.0020089	14 45 .1	14 43 .7	54 8 .0	54 2 .8
174 9 14 .3	N. 0° 07'	0.0018877	14 42 .7	14 42 .1	53 59 .8	53 57 .2
175 7 50 .9	0 .16	0.0017664	14 42 .0	14 42 .3	53 56 .8	53 57 .8
176 6 29 .3	0 .22	0.0016452	14 43 .0	14 43 .9	54 0 .2	54 3 .7
177 5 9 .7	0 .26	0.0015240	14 45 .2	14 46 .9	54 8 .5	54 14 .8
178 3 52 .1	0 .26	0.0014029	14 49 .0	14 51 .3	54 22 .3	54 30 .8
179 2 36 .6	0 .24	0.0012819	14 54 .1	14 57 .1	54 40 .9	54 52 .2
180 1 23 .2	0 .19	0.0011610	15 0 .5	15 4 .3	55 4 .6	55 18 .4
181 0 12 .0	N. 0° 10'	0.0010400	15 8 .4	15 13 .0	55 33 .7	55 50 .4
181 59 3 .1	0 .00	0.0009190	15 17 .9	15 23 .1	56 8 .4	56 27 .6
182 57 56 .4	S. 0° 13'	0.0007980	15 28 .8	15 34 .7	56 48 .4	57 10 .2
183 56 52 .1	0 .26	0.0006767	15 41 .0	15 47 .5	57 33 .2	57 56 .9
184 55 50 .2	0 .39	0.0005549	15 54 .1	16 0 .8	58 21 .4	58 45 .9
185 54 50 .5	0 .53	0.0004328	16 7 .4	16 13 .8	59 10 .2	59 33 .4
186 53 53 .1	0 .65	0.0003103	16 19 .7	16 25 .2	59 55 .4	60 15 .3
187 52 57 .9	S. 0° 76'	0.0001873	16 29 .9	16 33 .8	60 32 .7	60 46 .8

MEAN TIME.

		THE MOON'S						Meridian Passage.	
Day of the Week.	Day of the Month.	Longitude.		Latitude.		Age.	Noon.	Passage.	
		Noon.	Midnight.	Noon.	Midnight.				
		° ' "	° ' "	° ' "	° ' "	d	h m		
Thur.	1	110 44 2.1	117 56 59.1	S. 0 5 21.6	S. 0 44 7.8	25.9	21 38.9		
Frid.	2	125 16 16.5	132 41 21.7	1 22 42.3	2 0 20.9	26.9	22 35.1		
Sat.	3	140 11 29.2	147 45 40.0	2 36 17.2	3 9 45.9	27.9	23 29.5		
Sun.	4	155 22 46.0	163 1 28.9	3 40 2.7	4 6 27.1	28.9	♄		
Mon.	5	170 40 25.9	178 18 12.2	4 28 25.6	4 45 31.6	0.6	0 22.8		
Tues.	6	185 53 25.7	193 24 49.1	4 57 30.0	5 4 11.7	1.6	1 15.7		
Wed.	7	200 51 15.8	208 11 50.8	5 5 38.8	5 2 0.7	2.6	2 9.3		
Thur.	8	215 25 51.6	222 32 49.2	4 53 35.0	4 40 41.7	3.6	3 3.9		
Frid.	9	229 32 29.4	236 24 48.0	4 23 48.1	4 3 20.8	4.6	3 59.7		
Sat.	10	243 9 53.4	249 48 0.7	3 39 49.0	3 13 41.3	5.6	4 56.1		
Sun.	11	256 19 34.2	262 45 2.0	2 45 26.3	2 15 29.8	6.6	5 52.0		
Mon.	12	269 4 57.0	275 19 53.6	1 44 18.8	1 12 16.8	7.6	6 46.1		
Tues.	13	281 30 28.4	287 37 16.6	S. 0 39 46.5	S. 0 7 9.7	8.6	7 37.5		
Wed.	14	293 40 54.2	299 41 54.1	N. 0 25 13.3	N. 0 57 3.2	9.6	8 25.8		
Thur.	15	305 40 48.8	311 38 8.3	1 28 2.1	1 57 52.2	10.6	9 11.0		
Frid.	16	317 34 19.3	323 29 46.1	2 26 16.7	2 52 59.9	11.6	9 53.8		
Sat.	17	329 24 50.9	335 19 52.5	3 17 46.7	3 40 22.5	12.6	10 34.9		
Sun.	18	341 15 7.4	347 10 50.7	4 0 34.6	4 18 9.7	13.6	11 15.0		
Mon.	19	353 7 14.4	359 4 30.3	4 32 56.9	4 44 46.5	14.6	11 55.0		
Tues.	20	5 2 48.1	11 2 17.0	4 53 29.7	4 59 0.4	15.6	12 35.9		
Wed.	21	17 3 6.9	23 5 27.2	5 1 12.1	5 0 1.7	16.6	13 18.5		
Thur.	22	29 9 29.1	35 15 23.8	4 55 27.9	4 47 29.5	17.6	14 3.5		
Frid.	23	41 23 25.9	47 33 50.0	4 36 10.2	4 21 31.5	18.6	14 51.1		
Sat.	24	53 46 54.3	60 2 58.1	4 3 40.0	3 42 43.0	19.6	15 42.5		
Sun.	25	66 22 23.6	72 45 33.4	3 18 50.7	2 52 1.1	20.6	16 36.5		
Mon.	26	79 12 52.4	85 44 45.3	2 23 7.2	1 51 1.4	21.6	17 32.5		
Tues.	27	92 21 36.9	99 3 50.7	1 18 32.1	N. 0 43 1.1	22.6	18 29.5		
Wed.	28	105 51 47.3	112 45 43.3	N. 0 7 52.4	S. 0 28 1.1	23.6	19 25.5		
Thur.	29	119 45 49.5	126 52 8.8	S. 1 5 1.1	1 1.1	24.6	20 20.5		
Frid.	30	134 4 34.8	141 22 51.7	2 16 19.1	1.1	25.6	21 12.5		
Sat.	31	148 46 29.4	156 14 47.4	S. 3 20 1.1	1.1	26.6	22 6.5		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>THURSDAY 1.</i>				<i>SATURDAY 3.</i>			
0	7 ^h 29 ^m 38 ^s 23	N. 21° 46' 17" 2	86 ^{''} 98	0	9 ^h 27 ^m 1 ^s 99	N. 12° 17' 39" 6	146 ^{''} 37
1	7 32 8 50	21 37 35 6	88 43	1	9 29 24 60	12 3 4 4	146 73
2	7 34 38 66	21 28 45 0	89 98	2	9 31 47 04	11 48 24 1	147 53
3	7 37 8 71	21 19 45 3	91 46	3	9 34 9 31	11 33 38 9	148 33
4	7 39 38 64	21 10 36 6	92 92	4	9 36 31 43	11 18 48 8	149 16
5	7 42 8 44	21 1 19 0	94 42	5	9 38 53 38	11 3 53 9	149 32
6	7 44 38 13	20 51 52 5	95 90	6	9 41 15 18	10 48 54 4	150 67
7	7 47 7 68	20 42 17 1	97 36	7	9 43 36 82	10 33 50 4	151 40
8	7 49 37 10	20 32 33 0	98 80	8	9 45 58 30	10 18 42 0	152 12
9	7 52 6 39	20 22 40 2	100 23	9	9 48 19 64	10 3 29 2	152 32
10	7 54 35 54	20 12 38 8	101 67	10	9 50 40 82	9 48 12 3	153 50
11	7 57 4 54	20 2 28 8	103 10	11	9 53 1 86	9 32 51 3	154 17
12	7 59 33 40	19 52 10 2	104 50	12	9 55 22 75	9 17 26 3	154 30
13	8 2 2 11	19 41 43 2	105 90	13	9 57 43 50	9 1 57 5	155 43
14	8 4 30 68	19 31 7 8	107 28	14	10 0 4 11	8 46 24 9	156 03
15	8 6 59 09	19 20 24 1	108 66	15	10 2 24 58	8 30 48 7	156 60
16	8 9 27 35	19 9 32 2	110 02	16	10 4 44 91	8 15 9 1	157 18
17	8 11 55 45	18 58 32 1	111 35	17	10 7 5 11	7 59 26 0	157 72
18	8 14 23 39	18 47 24 0	112 70	18	10 9 25 18	7 43 39 7	158 23
19	8 16 51 17	18 36 7 8	114 02	19	10 11 45 13	7 27 50 3	158 75
20	8 19 18 78	18 24 43 7	115 33	20	10 14 4 94	7 11 57 8	159 22
21	8 21 46 23	18 13 11 7	116 63	21	10 16 24 64	6 56 2 5	159 70
22	8 24 13 51	18 1 31 9	117 90	22	10 18 44 21	6 40 4 3	160 13
23	8 26 40 63	N. 17° 49' 44" 5	119 18	23	10 21 3 67	N. 6° 24' 3" 5	160 57
<i>FRIDAY 2.</i>				<i>SUNDAY 4.</i>			
0	8 29 7 57	N. 17° 37' 49" 4	120 43	0	10 23 23 01	N. 6° 8' 0" 1	160 37
1	8 31 34 34	17 25 46 8	121 67	1	10 25 42 24	5 51 54 3	161 35
2	8 34 0 95	17 13 36 8	122 90	2	10 28 1 37	5 35 46 2	161 70
3	8 36 27 38	17 1 19 4	124 12	3	10 30 20 39	5 19 36 0	162 07
4	8 38 53 63	16 48 54 7	125 30	4	10 32 39 31	5 3 23 6	162 38
5	8 41 19 72	16 36 28 9	126 50	5	10 34 58 13	4 47 9 3	162 68
6	8 43 45 63	16 23 43 9	127 66	6	10 37 16 86	4 30 53 2	162 97
7	8 46 11 36	16 10 58 0	128 80	7	10 39 35 49	4 14 35 4	163 23
8	8 48 36 91	15 58 5 2	129 95	8	10 41 54 04	3 58 16 0	163 48
9	8 51 2 29	15 45 5 5	131 07	9	10 44 12 50	3 41 55 1	163 70
10	8 53 27 50	15 31 59 1	132 17	10	10 46 30 88	3 25 32 9	163 98
11	8 55 52 52	15 18 46 1	133 25	11	10 48 49 19	3 9 9 4	164 08
12	8 58 17 37	15 5 26 6	134 33	12	10 51 7 41	2 52 44 9	164 27
13	8 59 42 05	14 52 0 6	135 37	13	10 53 25 56	2 36 19 3	164 40
14	9 1 5 5	14 38 28 4	136 42	14	10 55 43 65	2 19 52 9	164 52
15	9 3 30 87	14 24 49 9	137 45	15	10 58 1 67	2 3 25 8	164 63
16	9 5 5 00	14 11 5 2	138 45	16	11 0 19 64	1 46 58 0	164 72
17	9 7 7 5	13 57 14 5	139 43	17	11 2 37 54	1 30 29 7	164 78
18	9 9 10 15	13 43 17 9	140 40	18	11 4 55 39	1 14 1 0	164 82
19	9 12 12 53	13 29 15 5	141 37	19	11 7 13 19	0 57 32 1	164 85
20	9 15 6 57	13 15 7 3	142 28	20	11 9 30 94	0 41 3 0	164 83
21	9 17 29 8	13 0 53 6	143 22	21	11 11 48 65	0 24 34 0	164 83
22	9 19 53 11	12 46 34 3	144 12	22	11 14 6 32	N. 0° 8' 5" 0	164 80
23	9 22 16 28	12 32 9 6	145 00	23	11 16 23 95	S. 0° 8' 23" 8	164 73
24	9 24 39 22	N. 12° 17' 39" 6		24	11 18 41 55	S. 0° 24' 52" 2	

14 9 3 30 87
 15 9 5 5 02
 16 9 7 7 5 00
 17 9 9 10 15 56 80
 18 9 12 12 53 43
 19 9 15 6 57 5
 20 9 17 29 8
 21 9 19 53 11
 22 9 22 16 28
 23 9 24 39 22
 24 9 27 1 99

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 th .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 th .
MONDAY 5.				WEDNESDAY 7.			
	<i>h m s</i>	<i>S. o i n</i>	<i>''</i>		<i>h m s</i>	<i>S. o i n</i>	<i>''</i>
0	11 18 41.55	S. 0 24 52.2	164.66	0	13 9 12.20	S. 12 51 46.8	139.18
1	11 20 59.12	0 41 20.1	164.55	1	13 11 32.06	13 5 41.9	138.25
2	11 23 16.66	0 57 47.4	164.45	2	13 13 52.02	13 19 31.4	137.30
3	11 25 34.18	1 14 14.1	164.32	3	13 16 12.10	13 33 15.2	136.33
4	11 27 51.68	1 30 40.0	164.15	4	13 18 32.28	13 46 53.1	135.33
5	11 30 9.16	1 47 4.9	163.97	5	13 20 52.58	14 0 25.1	134.33
6	11 32 26.64	2 3 28.7	163.80	6	13 23 12.98	14 13 51.1	133.32
7	11 34 44.10	2 19 51.5	163.57	7	13 25 33.51	14 27 11.0	132.30
8	11 37 1.56	2 36 12.9	163.33	8	13 27 54.14	14 40 24.8	131.25
9	11 39 19.02	2 52 32.9	163.10	9	13 30 14.89	14 53 32.3	130.20
10	11 41 36.48	3 8 51.5	162.82	10	13 32 35.76	15 6 33.5	129.13
11	11 43 53.95	3 25 8.4	162.53	11	13 34 56.75	15 19 28.3	128.05
12	11 46 11.42	3 41 23.6	162.23	12	13 37 17.85	15 32 16.6	126.97
13	11 48 28.90	3 57 37.9	161.90	13	13 39 39.07	15 44 58.4	125.85
14	11 50 46.40	4 13 48.4	161.57	14	13 42 0.41	15 57 33.5	124.75
15	11 53 3.92	4 29 57.8	161.18	15	13 44 21.86	16 10 2.0	123.60
16	11 55 21.46	4 46 4.9	160.82	16	13 46 43.44	16 22 23.6	122.47
17	11 57 39.02	5 2 9.8	160.40	17	13 49 5.13	16 34 38.4	121.30
18	11 59 56.61	5 18 12.2	159.98	18	13 51 26.95	16 46 46.2	120.13
19	12 2 14.24	5 34 12.1	159.55	19	13 53 48.88	16 58 47.0	118.97
20	12 4 31.91	5 50 9.4	159.08	20	13 56 10.93	17 10 40.8	117.77
21	12 6 49.61	6 6 3.9	158.60	21	13 58 33.10	17 22 27.4	116.55
22	12 9 7.35	6 21 55.5	158.12	22	14 0 55.39	17 34 6.7	115.35
23	12 11 25.14	S. 6 37 44.2	157.60	23	14 3 17.79	S. 17 45 38.8	114.15
TUESDAY 6.				THURSDAY 8.			
	<i>h m s</i>	<i>S. o i n</i>	<i>''</i>		<i>h m s</i>	<i>S. o i n</i>	<i>''</i>
0	12 13 42.98	S. 6 53 29.8	157.07	0	14 5 40.31	S. 17 57 3.5	112.97
1	12 16 0.86	7 9 12.2	156.80	1	14 8 2.95	18 8 20.7	111.63
2	12 18 18.80	7 24 51.2	156.38	2	14 10 25.71	18 19 30.5	110.27
3	12 20 36.79	7 40 26.8	155.97	3	14 12 48.58	18 30 32.7	109.10
4	12 22 54.84	7 55 59.0	155.75	4	14 15 11.56	18 41 27.3	107.82
5	12 25 12.95	8 11 27.5	155.12	5	14 17 34.66	18 52 14.2	106.53
6	12 27 31.12	8 26 52.2	154.50	6	14 19 57.87	19 2 53.4	105.23
7	12 29 49.37	8 42 13.2	153.82	7	14 22 21.19	19 13 24.8	103.93
8	12 32 7.68	8 57 30.2	152.17	8	14 24 44.63	19 23 48.4	102.60
9	12 34 26.07	9 12 43.2	151.47	9	14 27 8.17	19 34 4.0	101.20
10	12 36 44.53	9 27 52.0	150.77	10	14 29 31.81	19 44 11.8	99.95
11	12 39 3.07	9 42 56.6	150.05	11	14 31 55.56	19 54 11.5	98.62
12	12 41 21.69	9 57 56.9	149.32	12	14 34 19.42	20 4 3.2	97.27
13	12 43 40.39	10 12 52.8	148.55	13	14 36 43.38	20 13 46.8	95.92
14	12 45 59.18	10 27 44.1	147.78	14	14 39 7.43	20 23 22.3	94.55
15	12 48 18.06	10 42 30.8	146.98	15	14 41 31.59	20 32 49.6	93.18
16	12 50 37.02	10 57 12.7	146.30	16	14 43 55.84	20 42 8.7	91.78
17	12 52 56.08	11 11 49.9	145.37	17	14 46 20.18	20 51 19.4	90.40
18	12 55 15.23	11 26 22.1	144.52	18	14 48 44.61	21 0 21.8	89.02
19	12 57 34.47	11 40 49.3	143.68	19	14 51 9.13	21 9 15.9	87.60
20	12 59 53.82	11 55 11.4	142.82	20	14 53 33.73	21 18 1.5	86.23
21	13 2 13.26	12 9 28.3	141.93	21	14 55 58.42	21 26 38.6	84.78
22	13 4 32.81	12 23 39.9	141.08	22	14 58 23.18	21 35 7.3	83.35
23	13 6 52.45	12 37 46.1	140.12	23	15 0 48.02	21 43 27.4	81.92
24	13 9 12.20	S. 12 51 46.8		24	15 3 12.94	S. 21 51 38.9	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

ur.	Right Ascension.	Declination.	Diff. Dec. for 1 st .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 1 st .
FRIDAY 9.				SUNDAY 11.			
0	15 3 12 ^h 94 ^m	S. 21 51 38 ^s 9 ^o	80 ^o 48	0	16 59 20 ^h 31 ^m	S. 25 30 1 ^s 5 ^o	8 ^o 28
1	15 5 37 ^h 93 ^m	21 59 41 ^s 8 ^o	79 ^o 08	1	17 1 43 ^h 87 ^m	25 30 54 ^s 3 ^o	7 ^o 33
2	15 8 2 ^h 98 ^m	22 7 36 ^s 0 ^o	77 ^o 58	2	17 4 7 ^h 28 ^m	25 31 38 ^s 3 ^o	5 ^o 37
3	15 10 28 ^h 10 ^m	22 15 21 ^s 5 ^o	76 ^o 13	3	17 6 30 ^h 54 ^m	25 32 13 ^s 5 ^o	4 ^o 42
4	15 12 53 ^h 28 ^m	22 22 58 ^s 3 ^o	74 ^o 68	4	17 8 53 ^h 64 ^m	25 32 40 ^s 0 ^o	2 ^o 37
5	15 15 18 ^h 52 ^m	22 30 26 ^s 4 ^o	73 ^o 22	5	17 11 16 ^h 59 ^m	25 32 57 ^s 8 ^o	1 ^o 32
6	15 17 43 ^h 82 ^m	22 37 45 ^s 7 ^o	71 ^o 75	6	17 13 39 ^h 37 ^m	25 33 6 ^s 9 ^o	0 ^o 28
7	15 20 9 ^h 16 ^m	22 44 56 ^s 2 ^o	70 ^o 27	7	17 16 1 ^h 99 ^m	25 33 7 ^s 4 ^o	1 ^o 37
8	15 22 34 ^h 55 ^m	22 51 57 ^s 8 ^o	68 ^o 80	8	17 18 24 ^h 44 ^m	25 32 59 ^s 2 ^o	2 ^o 30
9	15 24 59 ^h 99 ^m	22 58 50 ^s 6 ^o	67 ^o 33	9	17 20 46 ^h 71 ^m	25 32 42 ^s 4 ^o	4 ^o 22
0	15 27 25 ^h 46 ^m	23 5 34 ^s 6 ^o	65 ^o 83	10	17 23 8 ^h 80 ^m	25 32 17 ^s 1 ^o	5 ^o 63
1	15 29 50 ^h 98 ^m	23 12 9 ^s 6 ^o	64 ^o 35	11	17 25 30 ^h 70 ^m	25 31 43 ^s 3 ^o	7 ^o 06
2	15 32 16 ^h 52 ^m	23 18 35 ^s 7 ^o	62 ^o 87	12	17 27 52 ^h 41 ^m	25 31 1 ^s 0 ^o	8 ^o 45
3	15 34 42 ^h 10 ^m	23 24 52 ^s 9 ^o	61 ^o 35	13	17 30 13 ^h 93 ^m	25 30 10 ^s 3 ^o	9 ^o 37
4	15 37 7 ^h 70 ^m	23 31 1 ^s 0 ^o	59 ^o 88	14	17 32 35 ^h 26 ^m	25 29 11 ^s 1 ^o	11 ^o 25
5	15 39 33 ^h 32 ^m	23 37 0 ^s 3 ^o	58 ^o 38	15	17 34 56 ^h 38 ^m	25 28 3 ^s 6 ^o	12 ^o 63
6	15 41 58 ^h 95 ^m	23 42 50 ^s 6 ^o	56 ^o 87	16	17 37 17 ^h 29 ^m	25 26 47 ^s 8 ^o	14 ^o 02
7	15 44 24 ^h 60 ^m	23 48 31 ^s 8 ^o	55 ^o 37	17	17 39 38 ^h 00 ^m	25 25 23 ^s 7 ^o	15 ^o 40
8	15 46 50 ^h 26 ^m	23 54 4 ^s 0 ^o	53 ^o 87	18	17 41 58 ^h 49 ^m	25 23 51 ^s 3 ^o	16 ^o 77
9	15 49 15 ^h 91 ^m	23 59 27 ^s 2 ^o	52 ^o 37	19	17 44 18 ^h 77 ^m	25 22 10 ^s 7 ^o	18 ^o 13
0	15 51 41 ^h 57 ^m	24 4 41 ^s 4 ^o	50 ^o 88	20	17 46 38 ^h 82 ^m	25 20 21 ^s 9 ^o	19 ^o 50
1	15 54 7 ^h 22 ^m	24 9 46 ^s 4 ^o	49 ^o 35	21	17 48 58 ^h 65 ^m	25 18 24 ^s 9 ^o	20 ^o 33
2	15 56 32 ^h 86 ^m	24 14 42 ^s 5 ^o	47 ^o 82	22	17 51 18 ^h 26 ^m	25 16 19 ^s 9 ^o	22 ^o 17
3	15 58 58 ^h 49 ^m	S. 24 19 29 ^s 4 ^o	46 ^o 32	23	17 53 37 ^h 63 ^m	S. 25 14 6 ^s 9 ^o	23 ^o 52
SATURDAY 10.				MONDAY 12.			
0	16 1 24 ^h 10 ^m	S. 24 24 7 ^s 3 ^o	44 ^o 80	0	17 55 56 ^h 76 ^m	S. 25 11 45 ^s 8 ^o	24 ^o 35
1	16 3 49 ^h 68 ^m	24 28 36 ^s 1 ^o	43 ^o 28	1	17 58 15 ^h 66 ^m	25 9 16 ^s 7 ^o	26 ^o 15
2	16 6 15 ^h 23 ^m	24 32 55 ^s 8 ^o	41 ^o 77	2	18 0 34 ^h 31 ^m	25 6 39 ^s 8 ^o	27 ^o 48
3	16 8 40 ^h 75 ^m	24 37 6 ^s 4 ^o	40 ^o 25	3	18 2 52 ^h 72 ^m	25 3 54 ^s 9 ^o	28 ^o 77
4	16 11 6 ^h 23 ^m	24 41 7 ^s 9 ^o	38 ^o 75	4	18 5 10 ^h 89 ^m	25 1 2 ^s 3 ^o	30 ^o 06
5	16 13 31 ^h 66 ^m	24 45 0 ^s 4 ^o	37 ^o 32	5	18 7 28 ^h 80 ^m	24 58 1 ^s 8 ^o	31 ^o 37
6	16 15 57 ^h 05 ^m	24 48 43 ^s 7 ^o	35 ^o 72	6	18 9 46 ^h 46 ^m	24 54 53 ^s 6 ^o	32 ^o 65
7	16 18 22 ^h 39 ^m	24 52 18 ^s 0 ^o	34 ^o 20	7	18 12 3 ^h 86 ^m	24 51 37 ^s 7 ^o	33 ^o 92
8	16 20 47 ^h 66 ^m	24 55 43 ^s 2 ^o	32 ^o 70	8	18 14 21 ^h 01 ^m	24 48 14 ^s 2 ^o	35 ^o 18
9	16 23 12 ^h 88 ^m	24 58 59 ^s 4 ^o	31 ^o 18	9	18 16 37 ^h 89 ^m	24 44 43 ^s 1 ^o	36 ^o 43
0	16 25 38 ^h 03 ^m	25 2 6 ^s 3 ^o	29 ^o 67	10	18 18 54 ^h 51 ^m	24 41 4 ^s 5 ^o	37 ^o 70
1	16 28 3 ^h 10 ^m	25 5 4 ^s 5 ^o	28 ^o 17	11	18 21 10 ^h 86 ^m	24 37 18 ^s 3 ^o	38 ^o 93
2	16 30 28 ^h 10 ^m	25 7 53 ^s 5 ^o	26 ^o 67	12	18 23 26 ^h 94 ^m	24 33 24 ^s 7 ^o	40 ^o 17
3	16 32 53 ^h 02 ^m	25 10 33 ^s 3 ^o	25 ^o 17	13	18 25 42 ^h 75 ^m	24 29 23 ^s 7 ^o	41 ^o 38
4	16 35 17 ^h 85 ^m	25 13 4 ^s 5 ^o	23 ^o 65	14	18 27 58 ^h 29 ^m	24 25 15 ^s 4 ^o	42 ^o 60
5	16 37 42 ^h 59 ^m	25 15 26 ^s 4 ^o	22 ^o 17	15	18 30 13 ^h 56 ^m	24 20 59 ^s 8 ^o	43 ^o 80
6	16 40 7 ^h 23 ^m	25 17 39 ^s 4 ^o	20 ^o 67	16	18 32 28 ^h 54 ^m	24 16 37 ^s 0 ^o	45 ^o 02
7	16 42 31 ^h 77 ^m	25 19 43 ^s 4 ^o	19 ^o 18	17	18 34 43 ^h 25 ^m	24 12 6 ^s 9 ^o	46 ^o 18
8	16 44 56 ^h 20 ^m	25 21 38 ^s 5 ^o	17 ^o 68	18	18 36 57 ^h 68 ^m	24 7 29 ^s 8 ^o	47 ^o 38
9	16 47 20 ^h 53 ^m	25 23 24 ^s 6 ^o	16 ^o 18	19	18 39 11 ^h 82 ^m	24 2 45 ^s 5 ^o	48 ^o 53
0	16 49 44 ^h 73 ^m	25 25 1 ^s 7 ^o	14 ^o 72	20	18 41 25 ^h 68 ^m	23 57 54 ^s 3 ^o	49 ^o 72
1	16 52 8 ^h 82 ^m	25 26 30 ^s 0 ^o	13 ^o 23	21	18 43 39 ^h 25 ^m	23 52 56 ^s 0 ^o	50 ^o 55
2	16 54 32 ^h 78 ^m	25 27 49 ^s 4 ^o	11 ^o 75	22	18 45 52 ^h 53 ^m	23 47 50 ^s 9 ^o	52 ^o 00
3	16 56 36 ^h 61 ^m	25 28 59 ^s 9 ^o	10 ^o 27	23	18 48 5 ^h 52 ^m	23 42 38 ^s 9 ^o	53 ^o 15
4	16 59 20 ^h 31 ^m	S. 25 30 1 ^s 5 ^o		24	18 50 18 ^h 23 ^m	S. 23 37 20 ^s 0 ^o	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>TUESDAY 13.</i>				<i>THURSDAY 15.</i>			
0	18 ^h 50 ^m 18 ^s 23	S. 23° 37' 20" 0	54 ^{''} 27	0	20 ^h 30 ^m 41 ^s 99	S. 17° 26' 42" 5	97 ^{''} 57
1	18 52 30 64	23 31 54 4	55 38	1	20 32 40 57	17 16 57 1	98 23
2	18 54 42 76	23 26 22 1	56 50	2	20 34 38 89	17 7 7 7	98 92
3	18 56 54 39	23 20 43 1	57 58	3	20 36 36 96	16 57 14 2	99 58
4	18 59 6 11	23 14 57 6	58 68	4	20 38 34 78	16 47 16 7	100 23
5	19 1 17 35	23 9 5 5	59 77	5	20 40 32 35	16 37 15 3	100 88
6	19 3 28 29	23 3 6 9	60 83	6	20 42 29 67	16 27 10 0	101 82
7	19 5 38 93	22 57 1 9	61 88	7	20 44 26 74	16 17 0 9	102 15
8	19 7 49 27	22 50 50 6	62 95	8	20 46 23 57	16 6 48 0	102 77
9	19 9 59 32	22 44 32 9	64 00	9	20 48 20 15	15 56 31 4	102 88
10	19 12 9 07	22 38 8 9	65 03	10	20 50 16 50	15 46 11 1	104 00
11	19 14 18 52	22 31 38 7	66 05	11	20 52 12 62	15 35 47 1	104 48
12	19 16 27 67	22 25 2 4	67 07	12	20 54 8 50	15 25 19 6	105 18
13	19 18 36 52	22 18 20 0	68 08	13	20 56 4 15	15 14 48 5	105 75
14	19 20 45 08	22 11 31 5	69 08	14	20 57 59 57	15 4 14 0	106 33
15	19 22 53 33	22 4 37 0	70 05	15	20 59 54 77	14 53 36 0	106 88
16	19 25 1 29	21 57 36 7	71 05	16	21 1 49 74	14 42 54 7	107 45
17	19 27 8 94	21 50 30 4	72 02	17	21 3 44 49	14 32 10 0	108 00
18	19 29 16 30	21 43 18 3	72 97	18	21 5 39 03	14 21 22 0	108 53
19	19 31 23 36	21 36 0 5	73 93	19	21 7 33 35	14 10 30 8	109 05
20	19 33 30 12	21 28 36 9	74 87	20	21 9 27 45	13 59 36 5	109 60
21	19 35 36 58	21 21 7 7	75 80	21	21 11 21 35	13 48 38 9	110 10
22	19 37 42 74	21 13 32 9	76 72	22	21 13 15 04	13 37 38 3	110 60
23	19 39 48 61	S. 21 5 52 6	77 65	23	21 15 8 53	S. 13 26 34 7	111 12
<i>WEDNESDAY 14.</i>				<i>FRIDAY 16.</i>			
0	19 41 54 18	S. 20 58 6 7	78 55	0	21 17 1 81	S. 13 15 28 0	111 60
1	19 43 59 46	20 50 15 4	79 48	1	21 18 54 90	13 4 18 4	112 08
2	19 46 4 44	20 42 18 8	80 33	2	21 20 47 79	12 53 5 9	112 55
3	19 48 9 13	20 34 16 9	81 22	3	21 22 40 49	12 41 50 6	113 03
4	19 50 13 52	20 26 9 6	82 07	4	21 24 33 00	12 30 32 4	113 48
5	19 52 17 62	20 17 57 2	82 98	5	21 26 25 32	12 19 11 5	113 93
6	19 54 21 44	20 9 39 6	83 78	6	21 28 17 46	12 7 47 9	114 38
7	19 56 24 96	20 1 16 9	84 62	7	21 30 9 42	11 56 21 6	114 82
8	19 58 28 19	19 52 49 2	85 47	8	21 32 1 20	11 44 52 7	115 25
9	20 0 31 14	19 44 16 4	86 27	9	21 33 52 81	11 33 21 2	115 67
10	20 2 33 80	19 35 38 8	87 10	10	21 35 44 24	11 21 47 2	116 08
11	20 4 36 18	19 26 56 2	87 90	11	21 37 35 51	11 10 10 7	116 48
12	20 6 38 28	19 18 8 8	88 70	12	21 39 26 61	10 58 31 8	116 88
13	20 8 40 09	19 9 16 6	89 48	13	21 41 17 55	10 46 50 5	117 28
14	20 10 41 63	19 0 19 7	90 27	14	21 43 8 33	10 35 6 8	117 65
15	20 12 42 89	18 51 18 1	91 03	15	21 44 58 96	10 23 20 9	118 05
16	20 14 43 87	18 42 11 9	91 78	16	21 46 49 44	10 11 32 6	118 40
17	20 16 44 57	18 33 1 2	92 56	17	21 48 39 76	9 59 42 2	118 77
18	20 18 45 01	18 23 45 9	93 28	18	21 50 29 94	9 47 49 6	119 12
19	20 20 45 17	18 14 26 2	94 03	19	21 52 19 97	9 35 54 9	119 45
20	20 22 45 06	18 5 2 0	94 75	20	21 54 9 86	9 23 58 2	119 80
21	20 24 44 69	17 55 33 5	95 47	21	21 55 59 62	9 11 59 4	120 18
22	20 26 44 05	17 46 0 7	96 17	22	21 57 49 24	8 59 58 6	120 45
23	20 28 43 15	17 36 23 7	96 87	23	21 59 38 74	8 47 55 9	120 77
24	20 30 41 99	S. 17 26 42 5		24	22 1 28 10	S. 8 35 51 3	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
SATURDAY 17.				MONDAY 19.			
0	22 1 28.10	S. 8 35 51.3	121.07	0	23 27 32.51	N. 1 26 42.8	127.34
1	22 3 17.34	8 23 44.9	121.38	1	23 29 19.71	1 39 27.1	127.32
2	22 5 6.46	8 11 36.6	121.67	2	23 31 6.94	1 52 11.0	127.28
3	22 6 55.46	7 59 26.6	121.95	3	23 32 54.22	2 4 54.7	127.22
4	22 8 44.35	7 47 14.9	122.22	4	23 34 41.55	2 17 38.0	127.17
5	22 10 33.12	7 35 1.6	122.50	5	23 36 28.93	2 30 21.0	127.07
6	22 12 21.79	7 22 46.6	122.77	6	23 38 16.36	2 43 3.4	127.00
7	22 14 10.35	7 10 30.0	123.03	7	23 40 3.85	2 55 45.4	126.92
8	22 15 58.82	6 58 11.8	123.27	8	23 41 51.39	3 8 26.9	126.83
9	22 17 47.18	6 45 52.2	123.52	9	23 43 39.01	3 21 7.8	126.72
10	22 19 35.45	6 33 31.1	123.75	10	23 45 26.69	3 33 48.1	126.60
11	22 21 23.62	6 21 8.6	123.98	11	23 47 14.44	3 46 27.7	126.48
12	22 23 11.71	6 8 44.7	124.20	12	23 49 2.26	3 59 6.6	126.35
13	22 24 59.71	5 56 19.5	124.42	13	23 50 50.16	4 11 44.7	126.23
14	22 26 47.63	5 43 53.0	124.68	14	23 52 38.15	4 24 22.1	126.08
15	22 28 35.47	5 31 25.2	124.88	15	23 54 26.22	4 36 58.6	125.93
16	22 30 23.24	5 18 56.3	125.02	16	23 56 14.37	4 49 34.2	125.78
17	22 32 10.93	5 6 26.2	125.20	17	23 58 2.61	5 2 8.9	125.62
18	22 33 58.56	4 53 55.0	125.38	18	23 59 50.95	5 14 42.6	125.45
19	22 35 46.12	4 41 22.7	125.55	19	0 1 39.39	5 27 15.3	125.27
20	22 37 33.62	4 28 49.4	125.72	20	0 3 27.93	5 39 46.9	125.10
21	22 39 21.07	4 16 15.1	125.87	21	0 5 16.57	5 52 17.5	124.88
22	22 41 8.46	4 3 39.9	126.02	22	0 7 5.32	6 4 46.8	124.70
23	22 42 55.80	S. 3 51 3.8	126.15	23	0 8 54.18	N. 6 17 15.0	124.48
SUNDAY 18.				TUESDAY 20.			
0	22 44 43.09	S. 3 38 26.9	126.28	0	0 10 43.15	N. 6 29 41.9	124.27
1	22 46 30.34	3 25 49.2	126.42	1	0 12 32.24	6 42 7.5	124.06
2	22 48 17.54	3 13 10.7	126.55	2	0 14 21.45	6 54 31.8	123.82
3	22 50 4.71	3 0 31.4	126.66	3	0 16 10.78	7 6 54.7	123.58
4	22 51 51.85	2 47 51.5	126.75	4	0 18 0.24	7 19 16.2	123.33
5	22 53 38.95	2 35 11.0	126.85	5	0 19 49.83	7 31 36.2	123.07
6	22 55 26.02	2 22 29.9	126.95	6	0 21 39.56	7 43 54.6	122.82
7	22 57 13.08	2 9 48.2	127.03	7	0 23 29.42	7 56 11.5	122.56
8	22 59 0.11	1 57 6.0	127.10	8	0 25 19.42	8 8 26.8	122.27
9	23 0 47.12	1 44 23.4	127.18	9	0 27 9.57	8 20 40.4	121.97
10	23 2 34.12	1 31 40.3	127.23	10	0 28 59.86	8 32 52.2	121.68
11	23 4 21.11	1 18 56.9	127.30	11	0 30 50.30	8 45 2.3	121.38
12	23 6 8.09	1 6 13.1	127.35	12	0 32 40.89	8 57 10.6	121.07
13	23 7 55.07	0 53 29.0	127.38	13	0 34 31.64	9 9 17.0	120.75
14	23 9 42.04	0 40 44.7	127.42	14	0 36 22.55	9 21 21.5	120.42
15	23 11 29.02	0 28 0.2	127.45	15	0 38 13.63	9 33 24.0	120.10
16	23 13 16.00	0 15 15.5	127.47	16	0 40 4.87	9 45 24.6	119.78
17	23 15 3.00	S. 0 2 30.7	127.48	17	0 41 56.28	9 57 23.0	119.48
18	23 16 50.00	N. 0 10 14.2	127.48	18	0 43 47.86	10 9 19.4	119.18
19	23 18 37.03	0 22 59.1	127.48	19	0 45 39.62	10 21 13.6	118.88
20	23 20 24.07	0 35 44.0	127.48	20	0 47 31.56	10 33	118.58
21	23 22 11.13	0 48 28.9	127.47	21	0 49 23.68	1	118.28
22	23 23 58.23	1 1 13.7	127.48	22	0 51 15.98	1	117.98
23	23 25 45.35	1 13 58.3	127.42	23	0 53 8.47	1	117.68
24	23 27 32.51	N. 1 26 42.8		24	0 55 1.15	N. 1	117.38

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{ms} .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{ms} .
WEDNESDAY 21.				FRIDAY 23.			
0	h m s . ^a 0 55 1 ^{.15}	N. 11 20 10 ^{.5}	116 ^{.70}	0	h m s . ^a 2 29 46 ^{.30}	N. 19 37 59 ^{.6}	86 ^{.55}
1	0 56 54 ^{.02}	11 31 50 ^{.7}	116 ^{.38}	1	2 31 51 ^{.42}	19 46 38 ^{.9}	85 ^{.67}
2	0 58 47 ^{.09}	11 43 28 ^{.4}	115 ^{.87}	2	2 33 56 ^{.84}	19 55 12 ^{.9}	84 ^{.82}
3	1 0 40 ^{.35}	11 55 3 ^{.6}	115 ^{.42}	3	2 36 2 ^{.56}	20 3 41 ^{.8}	83 ^{.98}
4	1 2 33 ^{.82}	12 6 36 ^{.1}	114 ^{.98}	4	2 38 8 ^{.58}	20 12 5 ^{.4}	83 ^{.03}
5	1 4 27 ^{.50}	12 18 6 ^{.0}	114 ^{.53}	5	2 40 14 ^{.90}	20 20 23 ^{.6}	82 ^{.13}
6	1 6 21 ^{.38}	12 29 33 ^{.2}	114 ^{.07}	6	2 42 21 ^{.53}	20 28 36 ^{.4}	81 ^{.23}
7	1 8 15 ^{.47}	12 40 57 ^{.6}	113 ^{.60}	7	2 44 28 ^{.46}	20 36 43 ^{.8}	80 ^{.30}
8	1 10 9 ^{.77}	12 52 19 ^{.2}	113 ^{.13}	8	2 46 35 ^{.70}	20 44 45 ^{.6}	79 ^{.37}
9	1 12 4 ^{.30}	13 3 38 ^{.0}	112 ^{.65}	9	2 48 43 ^{.24}	20 52 41 ^{.8}	78 ^{.43}
10	1 13 59 ^{.04}	13 14 53 ^{.9}	112 ^{.18}	10	2 50 51 ^{.09}	21 0 32 ^{.4}	77 ^{.50}
11	1 15 54 ^{.01}	13 26 6 ^{.7}	111 ^{.68}	11	2 52 59 ^{.24}	21 8 17 ^{.4}	76 ^{.52}
12	1 17 49 ^{.20}	13 37 16 ^{.6}	111 ^{.18}	12	2 55 7 ^{.70}	21 15 56 ^{.5}	75 ^{.57}
13	1 19 44 ^{.62}	13 48 23 ^{.4}	110 ^{.62}	13	2 57 16 ^{.47}	21 23 29 ^{.9}	74 ^{.58}
14	1 21 40 ^{.27}	13 59 27 ^{.1}	110 ^{.10}	14	2 59 25 ^{.54}	21 30 57 ^{.4}	73 ^{.58}
15	1 23 36 ^{.15}	14 10 27 ^{.7}	109 ^{.53}	15	3 1 34 ^{.92}	21 38 18 ^{.9}	72 ^{.60}
16	1 25 32 ^{.27}	14 21 24 ^{.9}	109 ^{.02}	16	3 3 44 ^{.61}	21 45 34 ^{.5}	71 ^{.58}
17	1 27 28 ^{.63}	14 32 19 ^{.0}	108 ^{.43}	17	3 5 54 ^{.60}	21 52 44 ^{.0}	70 ^{.57}
18	1 29 25 ^{.23}	14 43 9 ^{.6}	107 ^{.88}	18	3 8 4 ^{.90}	21 59 47 ^{.4}	69 ^{.53}
19	1 31 22 ^{.07}	14 53 56 ^{.9}	107 ^{.30}	19	3 10 15 ^{.51}	22 6 44 ^{.6}	68 ^{.50}
20	1 33 19 ^{.15}	15 4 40 ^{.7}	106 ^{.72}	20	3 12 26 ^{.42}	22 13 35 ^{.6}	67 ^{.45}
21	1 35 16 ^{.49}	15 15 21 ^{.0}	106 ^{.12}	21	3 14 37 ^{.63}	22 20 20 ^{.3}	66 ^{.40}
22	1 37 14 ^{.07}	15 25 57 ^{.7}	105 ^{.52}	22	3 16 49 ^{.15}	22 26 58 ^{.7}	65 ^{.30}
23	1 39 11 ^{.91}	N. 15 36 30 ^{.8}	104 ^{.92}	23	3 19 0 ^{.97}	N. 22 33 30 ^{.6}	64 ^{.25}
THURSDAY 22.				SATURDAY 24.			
0	1 41 10 ^{.01}	N. 15 47 0 ^{.3}	104 ^{.28}	0	3 21 13 ^{.10}	N. 22 39 56 ^{.1}	63 ^{.15}
1	1 43 8 ^{.36}	15 57 26 ^{.0}	103 ^{.65}	1	3 23 25 ^{.53}	22 46 15 ^{.0}	62 ^{.07}
2	1 45 6 ^{.97}	16 7 47 ^{.9}	103 ^{.00}	2	3 25 38 ^{.25}	22 52 27 ^{.4}	60 ^{.95}
3	1 47 5 ^{.84}	16 18 5 ^{.9}	102 ^{.27}	3	3 27 51 ^{.28}	22 58 33 ^{.1}	59 ^{.83}
4	1 49 4 ^{.98}	16 28 20 ^{.1}	101 ^{.70}	4	3 30 4 ^{.61}	23 4 32 ^{.1}	58 ^{.72}
5	1 51 4 ^{.38}	16 38 30 ^{.3}	101 ^{.03}	5	3 32 18 ^{.23}	23 10 24 ^{.4}	57 ^{.57}
6	1 53 4 ^{.06}	16 48 36 ^{.5}	100 ^{.25}	6	3 34 32 ^{.15}	23 16 9 ^{.8}	56 ^{.43}
7	1 55 4 ^{.00}	16 58 38 ^{.6}	99 ^{.67}	7	3 36 46 ^{.37}	23 21 48 ^{.4}	55 ^{.28}
8	1 57 4 ^{.22}	17 8 36 ^{.6}	99 ^{.98}	8	3 39 0 ^{.87}	23 27 20 ^{.1}	54 ^{.12}
9	1 59 4 ^{.71}	17 18 30 ^{.5}	99 ^{.27}	9	3 41 15 ^{.67}	23 32 44 ^{.8}	52 ^{.95}
10	2 1 5 ^{.48}	17 28 20 ^{.1}	97 ^{.57}	10	3 43 30 ^{.76}	23 38 2 ^{.5}	51 ^{.75}
11	2 3 6 ^{.53}	17 38 5 ^{.5}	96 ^{.83}	11	3 45 46 ^{.14}	23 43 13 ^{.0}	50 ^{.58}
12	2 5 7 ^{.86}	17 47 46 ^{.5}	96 ^{.12}	12	3 48 1 ^{.80}	23 48 16 ^{.5}	49 ^{.38}
13	2 7 9 ^{.47}	17 57 23 ^{.2}	95 ^{.38}	13	3 50 17 ^{.75}	23 53 12 ^{.8}	48 ^{.17}
14	2 9 11 ^{.37}	18 6 55 ^{.5}	94 ^{.62}	14	3 52 33 ^{.98}	23 58 1 ^{.8}	46 ^{.95}
15	2 11 13 ^{.55}	18 16 23 ^{.2}	93 ^{.87}	15	3 54 50 ^{.50}	24 2 43 ^{.5}	45 ^{.73}
16	2 13 16 ^{.02}	18 25 46 ^{.4}	93 ^{.08}	16	3 57 7 ^{.29}	24 7 17 ^{.9}	44 ^{.48}
17	2 15 18 ^{.78}	18 35 4 ^{.9}	92 ^{.30}	17	3 59 24 ^{.36}	24 11 44 ^{.8}	43 ^{.25}
18	2 17 21 ^{.83}	18 44 18 ^{.7}	91 ^{.52}	18	4 1 41 ^{.70}	24 16 4 ^{.3}	42 ^{.00}
19	2 19 25 ^{.17}	18 53 27 ^{.8}	90 ^{.70}	19	4 3 59 ^{.31}	24 20 16 ^{.3}	40 ^{.73}
20	2 21	19 2 32 ^{.0}	89 ^{.90}	20	4 6 17 ^{.49}	24 24 20 ^{.7}	39 ^{.45}
21	2 23	19 11 31 ^{.4}	89 ^{.07}	21	4 8 35 ^{.33}	24 28 17 ^{.4}	38 ^{.18}
22	2 25	19 20 25 ^{.8}	88 ^{.23}	22	4 10 53 ^{.74}	24 32 6 ^{.5}	36 ^{.90}
23	2 27	19 29 15 ^{.2}	87 ^{.40}	23	4 13 12 ^{.40}	24 35 47 ^{.9}	35 ^{.60}
24	2 29			24	4 15 31 ^{.33}	N. 24 39 21 ^{.5}	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .
<i>SUNDAY 25.</i>				<i>TUESDAY 27.</i>			
0	4 15 31 ^s .33	N.24 39 21 ^s .5	34 ^s .28	0	6 10 23 ^s .62	N.24 44 54 ^s .0	35 ^s .17
1	4 17 50 ^s .51	24 42 47 ^s .2	32 ^s .98	1	6 12 49 ^s .98	24 41 23 ^s .0	36 ^s .68
2	4 20 9 ^s .93	24 46 5 ^s .1	31 ^s .67	2	6 15 16 ^s .36	24 37 42 ^s .9	38 ^s .20
3	4 22 29 ^s .60	24 49 15 ^s .1	30 ^s .33	3	6 17 42 ^s .77	24 33 53 ^s .7	39 ^s .72
4	4 24 49 ^s .52	24 52 17 ^s .1	28 ^s .98	4	6 20 9 ^s .21	24 29 55 ^s .4	41 ^s .25
5	4 27 9 ^s .67	24 55 11 ^s .0	27 ^s .65	5	6 22 35 ^s .65	24 25 47 ^s .9	42 ^s .75
6	4 29 30 ^s .07	24 57 56 ^s .9	26 ^s .30	6	6 25 2 ^s .11	24 21 31 ^s .4	44 ^s .25
7	4 31 50 ^s .70	25 0 34 ^s .7	24 ^s .95	7	6 27 28 ^s .57	24 17 5 ^s .7	45 ^s .75
8	4 34 11 ^s .55	25 3 4 ^s .4	23 ^s .58	8	6 29 55 ^s .03	24 12 31 ^s .0	47 ^s .20
9	4 36 32 ^s .63	25 5 25 ^s .9	22 ^s .20	9	6 32 21 ^s .48	24 7 47 ^s .2	48 ^s .82
10	4 38 53 ^s .93	25 7 39 ^s .1	20 ^s .82	10	6 34 47 ^s .93	24 2 54 ^s .3	50 ^s .33
11	4 41 15 ^s .45	25 9 44 ^s .0	19 ^s .45	11	6 37 14 ^s .37	23 57 52 ^s .3	51 ^s .83
12	4 43 37 ^s .18	25 11 40 ^s .7	18 ^s .05	12	6 39 40 ^s .78	23 52 41 ^s .3	53 ^s .23
13	4 45 59 ^s .13	25 13 29 ^s .0	16 ^s .65	13	6 42 7 ^s .17	23 47 21 ^s .3	54 ^s .85
14	4 48 21 ^s .28	25 15 8 ^s .9	15 ^s .25	14	6 44 33 ^s .54	23 41 52 ^s .2	56 ^s .23
15	4 50 43 ^s .63	25 16 40 ^s .4	13 ^s .83	15	6 46 59 ^s .87	23 36 14 ^s .2	57 ^s .83
16	4 53 6 ^s .18	25 18 3 ^s .4	12 ^s .42	16	6 49 26 ^s .17	23 30 27 ^s .2	59 ^s .33
17	4 55 28 ^s .93	25 19 17 ^s .9	11 ^s .00	17	6 51 52 ^s .42	23 24 31 ^s .2	60 ^s .82
18	4 57 51 ^s .86	25 20 23 ^s .9	9 ^s .55	18	6 54 18 ^s .63	23 18 26 ^s .3	62 ^s .30
19	5 0 14 ^s .97	25 21 21 ^s .2	8 ^s .13	19	6 56 44 ^s .80	23 12 12 ^s .5	63 ^s .78
20	5 2 38 ^s .27	25 22 10 ^s .0	6 ^s .68	20	6 59 10 ^s .91	23 5 49 ^s .8	65 ^s .27
21	5 5 1 ^s .74	25 22 50 ^s .1	5 ^s .25	21	7 1 36 ^s .97	22 59 18 ^s .2	66 ^s .75
22	5 7 25 ^s .38	25 23 21 ^s .6	3 ^s .78	22	7 4 2 ^s .96	22 52 37 ^s .7	68 ^s .20
23	5 9 49 ^s .18	N.25 23 44 ^s .3	2 ^s .32	23	7 6 28 ^s .90	N.22 45 48 ^s .5	69 ^s .67
<i>MONDAY 26.</i>				<i>WEDNESDAY 28.</i>			
0	5 12 13 ^s .15	N.25 23 58 ^s .3	0 ^s .87	0	7 8 54 ^s .76	N.22 38 50 ^s .5	71 ^s .13
1	5 14 37 ^s .27	25 24 3 ^s .5	0 ^s .60	1	7 11 20 ^s .55	22 31 43 ^s .7	72 ^s .58
2	5 17 1 ^s .55	25 23 59 ^s .9	2 ^s .07	2	7 13 46 ^s .27	22 24 28 ^s .2	74 ^s .03
3	5 19 25 ^s .97	25 23 47 ^s .5	3 ^s .53	3	7 16 11 ^s .91	22 17 4 ^s .0	75 ^s .47
4	5 21 50 ^s .53	25 23 26 ^s .3	5 ^s .03	4	7 18 37 ^s .47	22 9 31 ^s .2	76 ^s .92
5	5 24 15 ^s .22	25 22 56 ^s .1	6 ^s .50	5	7 21 2 ^s .94	22 1 49 ^s .7	78 ^s .33
6	5 26 40 ^s .05	25 22 17 ^s .1	8 ^s .00	6	7 23 28 ^s .33	21 53 59 ^s .7	79 ^s .77
7	5 29 5 ^s .01	25 21 29 ^s .1	9 ^s .47	7	7 25 53 ^s .62	21 46 1 ^s .1	81 ^s .20
8	5 31 30 ^s .08	25 20 32 ^s .3	10 ^s .98	8	7 28 18 ^s .82	21 37 53 ^s .9	82 ^s .58
9	5 33 55 ^s .28	25 19 26 ^s .4	12 ^s .47	9	7 30 43 ^s .93	21 29 38 ^s .4	84 ^s .02
10	5 36 20 ^s .58	25 18 11 ^s .6	13 ^s .97	10	7 33 8 ^s .93	21 21 14 ^s .3	85 ^s .40
11	5 38 45 ^s .99	25 16 47 ^s .8	15 ^s .47	11	7 35 33 ^s .84	21 12 41 ^s .9	86 ^s .78
12	5 41 11 ^s .49	25 15 15 ^s .0	16 ^s .97	12	7 37 58 ^s .64	21 4 1 ^s .2	88 ^s .17
13	5 43 37 ^s .10	25 13 33 ^s .2	18 ^s .48	13	7 40 23 ^s .33	20 55 12 ^s .2	89 ^s .55
14	5 46 2 ^s .79	25 11 42 ^s .3	19 ^s .98	14	7 42 47 ^s .91	20 46 14 ^s .9	90 ^s .93
15	5 48 28 ^s .58	25 9 42 ^s .4	21 ^s .50	15	7 45 12 ^s .38	20 37 9 ^s .3	92 ^s .28
16	5 50 54 ^s .44	25 7 33 ^s .4	23 ^s .02	16	7 47 36 ^s .74	20 27 55 ^s .7	93 ^s .63
17	5 53 20 ^s .38	25 5 15 ^s .3	24 ^s .52	17	7 50 0 ^s .98	20 18 33 ^s .9	94 ^s .97
18	5 55 46 ^s .39	25 2 48 ^s .2	26 ^s .05	18	7 52 25 ^s .10	20 9 4 ^s .1	96 ^s .30
19	5 58 12 ^s .46	25 0 11 ^s .9	27 ^s .55	19	7 54 49 ^s .11	19 59 26 ^s .3	97 ^s .63
20	6 0 38 ^s .59	24 57 26 ^s .6	29 ^s .08	20	7 57 12 ^s .99	19 40 40 ^s .5	98 ^s .95
21	6 3 4 ^s .78	24 54 32 ^s .1	30 ^s .60	21	7 59 36 ^s .75		
22	6 5 31 ^s .02	24 51 28 ^s .5	32 ^s .12	22	8 2 0 ^s .38		
23	6 7 57 ^s .30	24 48 15 ^s .8	33 ^s .63	23	8 4 23 ^s .89		
24	6 10 23 ^s .62	N.24 44 54 ^s .0		24	8 6 47 ^s .95		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>THURSDAY 29.</i>				<i>FRIDAY 30.</i>			
	^h ^m ^s	^o ['] ["]	["]		^h ^m ^s	^o ['] ["]	["]
0	8 6 47.28	N.19 9 18.9	104.12	0	9 3 28.65	N.14 26 36.1	131.48
1	8 9 10.53	18 58 54.2	105.28	1	9 5 48.73	14 13 27.2	132.47
2	8 11 33.65	18 48 21.9	106.65	2	9 8 8.68	14 0 12.4	133.45
3	8 13 56.64	18 37 42.0	107.90	3	9 10 28.51	13 46 51.7	134.40
4	8 16 19.50	18 26 54.6	109.13	4	9 12 48.21	13 33 25.3	135.33
5	8 18 42.23	18 15 59.8	110.37	5	9 15 7.80	13 19 53.3	136.27
6	8 21 4.83	18 4 57.6	111.57	6	9 17 27.26	13 6 15.7	137.18
7	8 23 27.29	17 53 48.2	112.80	7	9 19 46.61	12 52 32.6	138.08
8	8 25 49.62	17 42 31.4	113.98	8	9 22 5.84	12 38 44.1	138.97
9	8 28 11.81	17 31 7.5	115.17	9	9 24 24.95	12 24 50.3	139.83
10	8 30 33.87	17 19 36.5	116.33	10	9 26 43.95	12 10 51.3	140.68
11	8 32 55.80	17 7 58.5	117.50	11	9 29 2.84	11 56 47.2	141.53
12	8 35 17.59	16 56 13.5	118.65	12	9 31 21.62	11 42 38.0	142.38
13	8 37 39.24	16 44 21.6	119.80	13	9 33 40.29	11 28 23.9	143.17
14	8 40 0.76	16 32 22.8	120.92	14	9 35 58.86	11 14 4.9	143.97
15	8 42 22.15	16 20 17.3	122.02	15	9 38 17.32	10 59 41.1	144.73
16	8 44 43.40	16 8 5.2	123.13	16	9 40 35.68	10 45 12.7	145.52
17	8 47 4.52	15 55 46.4	124.23	17	9 42 53.95	10 30 39.6	146.25
18	8 49 25.50	15 43 21.0	125.30	18	9 45 12.12	10 16 2.1	146.98
19	8 51 46.35	15 30 49.2	126.35	19	9 47 30.19	10 1 20.2	147.70
20	8 54 7.07	15 18 11.1	127.42	20	9 49 48.18	9 46 34.0	148.42
21	8 56 27.66	15 5 26.6	128.45	21	9 52 6.08	9 31 43.5	149.08
22	8 58 48.12	14 52 35.9	129.48	22	9 54 23.89	9 16 49.0	149.75
23	9 1 8.45	14 39 39.0	130.48	23	9 56 41.63	9 1 50.5	150.42
24	9 3 28.65	N.14 26 36.1		24	9 58 59.28	N. 8 46 48.0	

PHASES OF THE MOON.

● New Moon	- - - - -	d	h	m
☾ First Quarter	- - - - -	4	10	15.3
○ Full Moon	- - - - -	11	3	58.4
☾ Last Quarter	- - - - -	19	6	33.8
	- - - - -	27	3	5.0

☾ Perigee	- - - - -	d	h
☾ Apogee	- - - - -	4	11
	- - - - -	17	21

MEAN TIME.

LUNAR DISTANCES.

the Month.	Star's Name and Position.	Noon.			P. L. of diff.	III ^h .			P. L. of diff.	VI ^h .			P. L. of diff.	IX ^h .		
		°	'	"		°	'	"		°	'	"		°	'	"
1	α Arietis W.	75	30	26	2234	77	18	3	2217	79	6	5	2201	80	54	31
	Aldebaran W.	43	24	19	2326	45	9	41	2303	46	55	36	2281	48	42	4
	SUN E.	47	51	14	2538	46	10	54	2522	44	30	12	2507	42	49	8
2	Aldebaran W.	57	41	48	2167	59	31	5	2151	61	20	46	2136	63	10	50
	Pollux W.	16	19	21	2472	18	1	14	2391	19	45	2	2326	21	30	23
	SUN E.	34	18	37	2424	32	35	37	2413	30	52	21	2405	29	8	53
6	SUN W.	22	57	52	2385	24	41	48	2389	26	25	39	2394	28	9	22
	Antares E.	61	26	43	2029	59	33	54	2040	57	41	22	2050	55	49	6
	Saturn E.	91	59	0	2026	90	6	7	2037	88	13	30	2048	86	21	10
	Jupiter E.	96	54	1	2025	95	1	6	2035	93	8	27	2047	91	16	6
7	SUN W.	36	44	54	2454	38	27	12	2469	40	9	9	2483	41	50	46
	Antares E.	46	32	36	2129	44	42	21	2144	42	52	29	2159	41	3	0
	Saturn E.	77	4	21	2126	75	14	2	2141	73	24	6	2157	71	34	33
	Jupiter E.	81	59	10	2126	80	8	50	2141	78	18	53	2156	76	29	19
	α Aquilæ E.	100	4	42	2696	98	27	56	2705	96	51	23	2717	95	15	5
8	SUN W.	50	13	20	2582	51	52	40	2601	53	31	34	2618	55	10	4
	Antares E.	32	1	43	2260	30	14	44	2277	28	28	11	2296	26	42	5
	Saturn E.	62	32	53	2256	60	45	49	2274	58	59	11	2292	57	12	59
	Jupiter E.	67	27	35	2256	65	40	30	2273	63	53	51	2291	62	7	39
	α Aquilæ E.	87	18	12	2810	85	43	57	2830	84	10	8	2852	82	36	47
9	SUN W.	63	16	13	2732	64	52	10	2751	66	27	42	2772	68	2	46
	Spica ♀ W.	27	56	51	2426	29	39	49	2443	31	22	23	2459	33	4	34
	Venus W.	18	57	2	2845	20	30	32	2853	22	3	51	2864	23	36	56
	Saturn E.	48	28	34	2401	46	45	1	2419	45	1	54	2438	43	19	13
	Jupiter E.	53	23	11	2400	51	39	36	2419	49	56	28	2438	48	13	47
	α Aquilæ E.	74	57	34	3002	73	27	23	3031	71	57	49	3061	70	28	52
10	SUN W.	75	51	54	2888	77	24	28	2906	78	56	39	2925	80	28	26
	Spica ♀ W.	41	29	42	2559	43	9	33	2576	44	49	1	2593	46	28	6
	Venus W.	31	17	56	2952	32	49	9	2969	34	20	0	2985	35	50	31
	Saturn E.	34	52	21	2548	33	12	15	2567	31	32	34	2585	29	53	18
	Jupiter E.	39	46	46	2547	38	6	38	2564	36	26	54	2582	34	47	35
	Fomalhaut E.	87	16	28	2958	85	45	22	2978	84	14	41	2998	82	44	25
11	SUN W.	88	1	32	3035	89	31	2	3052	91	0	11	3069	92	28	59
	Spica ♀ W.	54	37	56	2690	56	14	49	2706	57	51	21	2721	59	27	33
	Venus W.	43	17	53	3086	44	46	20	3101	46	14	28	3118	47	42	16
	Fomalhaut E.	75	19	32	3127	73	51	55	3150	72	24	46	3173	70	58	5
	α Pegasi E.	95	36	32	2830	94	2	43	2845	92	29	14	2861	90	56	5
12	SUN W.	99	48	3	3163	101	14	56	3178	102	41	31	3193	104	7	49
	Spica ♀ W.	67	23	43	2807	68	58	2	2821	70	32	3	2836	72	5	49
	Venus W.	54	56	38	3209	56	22	37	3222	57	48	20	3236	59	13	47
	Antares W.	21	39	41	2806	23	14	1	2818	24	48	5	2831	22	3	3
	Fomalhaut E.	63	52	7	3329	62	28	29	3359	61	5	25	3374	59	5	25
	α Pegasi E.	83	15	7	2950	81	43	52	2965	80	12			78	12	
13	SUN W.	111	15	17	3271	112	40	2	3282	113	28	11	3293	114	16	11
	Spica ♀ W.	79	50	42	2903	81	22	57	2913	79	50	42	2923	77	42	34
	Venus W.	66	17	15	3310	67	41	15	3322	65	30	8	3334	63	19	7

MEAN TIME.

LUNAR DISTANCES.

the Month.	Star's Name and Position.	Midnight.			P. L. of diff.			XV ^h .			P. L. of diff.			XVIII ^h .			P. L. of diff.			XXI ^h .			P. L. of diff.		
		°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"
1	α Arietis W.	82	43	22	2169	84	32	36	2153	86	22	14	2189	88	12	13	2125								
	Aldebaran W.	50	29	3	2239	52	16	33	2220	54	4	31	2202	55	52	56	2184								
	SUN E.	41	7	41	2476	39	25	54	2462	37	43	47	2449	36	1	22	2435								
2	Aldebaran W.	65	1	16	2109	66	52	2	2096	68	43	7	2084	70	34	31	2074								
	Pollux W.	23	16	58	2233	25	4	36	2197	26	53	8	2168	28	42	24	2142								
	SUN E.	27	25	14	2392	25	41	28	2387	23	57	35	2385	22	13	39	2384								
6	SUN W.	29	52	56	2409	31	36	18	2419	33	19	26	2429	35	2	19	2442								
	Antares E.	53	57	8	2075	52	5	30	2087	50	14	11	2101	48	23	13	2115								
	Saturn E.	84	29	9	2072	82	37	27	2085	80	46	4	2098	78	55	2	2112								
	Jupiter E.	89	24	3	2071	87	32	19	2084	85	40	55	2098	83	49	52	2111								
7	SUN W.	43	32	3	2514	45	12	57	2530	46	53	28	2548	48	33	35	2564								
	Antares E.	39	13	55	2191	37	25	14	2208	35	36	58	2225	33	49	8	2242								
	Saturn E.	69	45	24	2188	67	56	39	2204	66	8	18	2222	64	20	23	2239								
	Jupiter E.	74	40	9	2188	72	51	23	2204	71	3	2	2221	69	15	6	2238								
	α Aquilæ E.	93	39	2	2742	92	3	18	2757	90	27	54	2774	88	52	52	2791								
8	SUN W.	56	48	9	2655	58	25	49	2675	60	3	3	2694	61	39	51	2714								
	Antares E.	24	56	26	2333	23	11	14	2352	21	26	30	2371	19	42	13	2390								
	Saturn E.	55	27	13	2327	53	41	53	2346	51	57	0	2364	50	12	34	2382								
	Jupiter E.	60	21	52	2327	58	36	32	2345	56	51	38	2364	55	7	11	2382								
	α Aquilæ E.	81	3	54	2896	79	31	30	2921	77	59	38	2947	76	28	19	2974								
9	SUN W.	69	37	26	2810	71	11	41	2830	72	45	30	2849	74	18	53	2869								
	Spica ♀ W.	34	46	22	2492	36	27	47	2508	38	8	49	2525	39	49	27	2542								
	Venus W.	25	9	45	2890	26	42	17	2905	28	14	30	2920	29	46	23	2936								
	Saturn E.	41	36	59	2475	39	55	11	2494	38	13	49	2512	36	32	52	2530								
	Jupiter E.	46	31	32	2474	44	49	42	2492	43	8	18	2510	41	27	19	2529								
	α Aquilæ E.	69	0	34	3126	67	32	56	3161	66	6	0	3196	64	39	46	3233								
10	SUN W.	81	59	48	2962	83	30	48	2981	85	1	25	2998	86	31	40	3017								
	Spica ♀ W.	48	6	49	2626	49	45	9	2642	51	23	6	2658	53	0	42	2675								
	Venus W.	37	20	41	3019	38	50	30	3036	40	19	58	3052	41	49	6	3069								
	Saturn E.	28	14	26	2621	26	35	59	2638	24	57	55	2656	23	20	16	2673								
	Jupiter E.	33	8	39	2618	31	30	8	2634	29	51	59	2651	28	14	13	2667								
	Fomalhaut E.	81	14	34	3039	79	45	9	3060	78	16	10	3081	76	47	37	3104								
11	SUN W.	93	57	27	3102	95	25	34	3117	96	53	23	3133	98	20	53	3149								
	Spica ♀ W.	61	3	25	2750	62	38	58	2766	64	14	11	2779	65	49	6	2793								
	Venus W.	49	9	45	3149	50	36	55	3164	52	3	47	3179	53	30	21	3194								
	Fomalhaut E.	69	31	53	3222	68	6	10	3248	66	40	58	3275	65	16	17	3301								
	α Pegasi E.	89	23	15	2891	87	50	45	2905	86	18	33	2921	84	46	41	2935								
12	SUN W.	105	33	50	3221	106	59	34	3233	108	25	4	3247	109	50	18	3259								
	Spica ♀ W.	73	39	18	2858	75	12	31	2870	76	45	29	2880	78	18	13	2892								
	Venus W.	60	38	59	3263	62	3	54	3275	63	28	35	3297	64	53	2	3299								
	Antares W.	27	55	25	2855	29	28	42	2867	31	1	43	2877	32	34	31	2889								
	Fomalhaut E.	58	20	59	3450	56	59	39	3485	55	38	58	3519	54	18	53	3556								
	α Pegasi E.	77	11	56	3008	75	41	53	3022	74	12	7	3036	72	42	39	3050								
			52	56	3316	118	16	49	3327	119	40	29	3337	121	3	58	3346								
			04	2942	87	29	49	2981	89	1	3	2961	90	32	5	2969									
					73	15	11	3362	74	38	11	3371	76	1	1	3380									

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.	P. L.	XV ^h .			P. L.	XVIII ^h .			P. L.	XXI ^h .			P. L.
			of diff.	°	'	"	of diff.	°	'	"	of diff.	°	'	"	of diff.
13	Antares W.	40 15 6	2937	41 46 36	2947	43 17 55	2956	44 49 3	2965						
	Fomalhaut E.	47 49 27	3774	46 33 58	3826	45 19 23	3883	44 5 46	3944						
	α Pegasi E.	65 19 36	3119	63 51 50	3133	62 24 21	3148	60 57 9	3162						
14	SUN W.	127 58 42	3391	129 21 9	3399	130 43 27	3406	132 5 37	3414						
	Venus W.	82 52 46	3418	84 14 42	3425	85 36 30	3431	86 58 12	3438						
	Antares W.	52 22 15	3001	53 52 27	3007	55 22 31	3013	56 52 28	3018						
	Fomalhaut E.	38 14 35	4340	37 8 19	4444	36 3 37	4559	35 0 37	4688						
α Pegasi E.	53 45 28	3237	52 20 2	3252	50 54 54	3270	49 30 7	3287							
15	SUN W.	138 54 26	3446	140 15 50	3453	141 37 7	3460	142 58 16	3465						
	Venus W.	93 45 5	3461	95 6 13	3466	96 27 15	3469	97 48 14	3472						
	Antares W.	64 20 36	3041	65 49 58	3046	67 19 14	3049	68 48 26	3052						
	Saturn W.	33 50 3	3047	35 19 18	3050	36 48 29	3054	38 17 35	3056						
	Jupiter W.	28 49 0	3049	30 18 12	3052	31 47 20	3056	33 16 23	3060						
	α Pegasi E.	42 31 36	3389	41 9 7	3415	39 47 8	3443	38 25 40	3473						
α Arietis E.	83 35 27	3058	82 6 26	3061	80 37 29	3066	79 8 38	3069							
16	Antares W.	76 13 33	3065	77 42 26	3066	79 11 17	3068	80 40 6	3069						
	Saturn W.	45 42 16	3069	47 11 4	3071	48 39 49	3071	50 8 34	3073						
	Jupiter W.	40 40 43	3073	42 9 26	3074	43 38 7	3077	45 6 45	3078						
	α Pegasi E.	31 47 56	3681	30 30 49	3739	29 14 43	3807	27 59 48	3884						
	α Arietis E.	71 45 18	3083	70 16 48	3085	68 48 20	3087	67 19 54	3089						
17	Antares W.	88 3 54	3072	89 32 38	3072	91 1 22	3071	92 30 7	3071						
	Saturn W.	57 31 57	3076	59 0 36	3077	60 29 14	3075	61 57 54	3076						
	Jupiter W.	52 29 39	3082	53 58 11	3081	55 26 44	3082	56 55 16	3081						
	α Arietis E.	59 58 13	3095	58 29 57	3096	57 1 42	3096	55 33 27	3096						
	Aldebaran E.	92 36 5	3122	91 8 22	3123	89 40 40	3122	88 12 57	3121						
18	Saturn W.	69 21 21	3071	70 50 6	3069	72 18 53	3068	73 47 42	3066						
	Jupiter W.	64 18 8	3078	65 46 45	3075	67 15 25	3074	68 44 6	3073						
	α Aquilæ W.	51 28 29	4033	52 39 36	3995	53 51 21	3957	55 3 43	3923						
	α Arietis E.	48 12 22	3098	46 44 10	3098	45 15 58	3099	43 47 47	3098						
	Aldebaran E.	80 54 12	3119	79 26 25	3117	77 58 36	3116	76 30 46	3114						
19	Saturn W.	81 12 22	3055	82 41 27	3052	84 10 35	3049	85 39 47	3047						
	Jupiter W.	76 8 6	3062	77 37 2	3059	79 6 2	3056	80 35 5	3054						
	α Aquilæ W.	61 13 22	3785	62 28 40	3763	63 44 21	3742	65 0 24	3721						
	α Arietis E.	36 26 54	3102	34 58 47	3102	33 30 40	3105	32 2 36	3106						
	Aldebaran E.	69 11 12	3108	67 43 12	3107	66 15 11	3105	64 47 7	3104						
20	Saturn W.	93 6 43	3029	94 36 20	3026	96 6 1	3021	97 35 48	3017						
	Jupiter W.	88 1 17	3037	89 30 44	3032	91 0 17	3029	92 29 54	3025						
	α Aquilæ W.	71 25 33	3637	72 43 27	3624	74 1 35	3610	75 19 59	3598						
	Fomalhaut W.	46 36 25	3860	47 50 25	3817	49 5 10	3778	50 20 35	3741						
	Aldebaran E.	57 26 21	3096	55 58 7	3094	54 29 50	3093	53 1 32	3092						
21	Saturn W.	105 6 4	2993	106 36 26	2988	108 6 54	2982	109 37 29	2977						
	Jupiter W.	99 59 22	3001	101 29 34	2995	102 59 53	2990	104 30 18	2985						
	α Aquilæ W.	81 55 4	3545	83 14 39	3536	84 34 23	3527	85 54 18	3520						
	Fomalhaut W.	56 46 34	3590	58 5 19	3566	59 24 31	3543	60 44 8	3519						
	Aldebaran E.	45 39 42	3089	44 11 19	3088	42 42 55	3090	41 14 33	3091						

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.			P.L. of diff.			XV ^a .			P.L. of diff.			XVIII ^b .			P.L. of diff.			XXI ^c .			P.L. of diff.			
		°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	
22	Jupiter W.	112	4	14	2953	113	35	26	2946	115	6	46	2939	116	38	15	2931									
	α Aquilæ W.	92	35	48	2487	93	56	27	2482	95	17	11	2478	96	38	0	2473									
	Fomalhaut W.	67	28	3	3423	68	49	53	3407	70	12	2	3391	71	34	29	3375									
	α Pegasi W.	45	13	10	3235	46	38	38	3214	48	4	31	3194	49	30	48	3173									
	Aldebaran E.	33	53	24	3110	32	25	27	3119	30	57	40	3129	29	30	6	3142									
23	Pollux E.	75	21	55	2973	73	51	8	2966	72	20	12	2959	70	49	8	2952									
	Fomalhaut W.	78	31	2	3205	79	55	8	3291	81	19	30	3279	82	44	6	3267									
	α Pegasi W.	56	47	48	3087	58	16	14	3071	59	44	59	3056	61	14	3	3041									
	Pollux E.	63	11	37	2916	61	39	39	2909	60	7	32	2901	58	35	14	2894									
	Mars E.	104	11	2	3118	102	43	14	3108	101	15	14	3098	99	47	2	3089									
24	SUN E.	132	47	43	3262	131	22	47	3252	129	57	39	3241	128	32	18	3231									
	Fomalhaut W.	89	50	32	3210	91	16	29	3201	92	42	37	3190	94	8	58	3181									
	α Pegasi W.	68	43	58	2967	70	14	52	2954	71	46	3	2939	73	17	32	2926									
	Pollux E.	50	51	16	2853	49	17	57	2845	47	44	27	2827	46	10	47	2823									
	Mars E.	92	22	58	3035	90	53	29	3024	89	23	46	3013	87	53	49	3001									
25	SUN E.	121	22	15	3172	119	55	33	3159	118	28	35	3147	117	1	22	3134									
	α Pegasi W.	80	59	22	2856	82	32	38	2842	84	6	12	2828	85	40	4	2814									
	α Arietis W.	37	41	35	2750	39	17	8	2735	40	53	2	2719	42	29	17	2703									
	Pollux E.	38	19	57	2792	36	45	19	2786	35	10	33	2782	33	35	41	2777									
	Regulus E.	74	52	48	2714	73	16	27	2701	71	39	49	2689	70	2	55	2675									
26	Mars E.	80	20	16	2988	78	48	46	2924	77	16	58	2912	75	44	54	2898									
	SUN E.	109	41	22	3068	108	12	33	3053	106	43	26	3039	105	14	2	3025									
	α Pegasi W.	93	33	56	2744	95	9	38	2731	96	45	37	2717	98	21	55	2703									
	α Arietis W.	50	35	47	2624	52	14	9	2609	53	52	52	2593	55	31	57	2577									
	Pollux E.	25	40	39	2784	24	5	50	2796	22	31	17	2814	20	57	7	2829									
27	Regulus E.	61	53	51	2607	60	15	6	2593	58	36	2	2579	56	56	38	2565									
	Mars E.	68	0	4	2827	66	26	11	2811	64	51	58	2797	63	17	26	2782									
	SUN E.	97	42	24	2949	96	11	7	2932	94	39	29	2917	93	7	32	2901									
	α Arietis W.	63	52	54	2496	65	34	13	2480	67	15	55	2463	68	58	0	2448									
	Aldebaran W.	32	1	48	2650	33	39	35	2619	35	18	4	2591	36	57	12	2564									
28	Regulus E.	48	34	38	2491	46	53	12	2477	45	11	26	2462	43	29	19	2447									
	Mars E.	55	19	46	2705	53	43	13	2690	52	6	19	2675	50	29	5	2660									
	SUN E.	85	22	32	2818	83	48	27	2801	82	14	1	2785	80	39	13	2768									
	α Arietis W.	77	34	10	2366	79	18	34	2351	81	3	20	2334	82	48	30	2318									
	Aldebaran W.	45	21	41	2445	47	4	12	2424	48	47	13	2403	50	30	44	2383									
29	Regulus E.	34	53	37	2377	33	9	29	2364	31	25	2	2352	29	40	18	2340									
	Mars E.	42	17	51	2586	40	38	37	2572	38	59	4	2558	37	19	12	2546									
	SUN E.	72	39	39	2684	71	2	37	2667	69	25	13	2650	67	47	26	2634									
	α Arietis W.	91	40	2	2242	93	27	27	2227	95	15	14	2214	97	3	31	2199									
	Aldebaran W.	59	15	13	2293	61	1	25	2274	62	48	3	2259	64	35	4	2241									
30	Mars E.	28	55	52	2497	27	14	34	2491	25	38	8	2487	23	51	37	2487									
	S.	59	33	5	2655	57	53	9	2641	56	12	53	2627	54	32	17	2612									
	Aldebaran W.	45	21	41	2445	47	4	12	2424	48	47	13	2403	50	30	44	2383									
30	P.	35	53	2170	33	25	6	2157	31	25	2	2145	29	4	28	2134										
	Pe	4	2229	3	31	48	2207	35	20	5	2187	37	8	52	2169											
	SUN	42	39	35	2430	42	39	35	2440	42	39	35	2430	40	56	43	2421									

CONFIGURATIONS OF THE SATELLITES OF JUPITER.

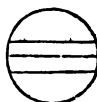
At 8^h, MEAN TIME.

Day of the Month.	West.				East.			
1	1 ^o ○							
2								
3	2 ^o ○							
4								
5								
6								
7								
8								
9	1 ^o ●							
10								
11								
12								
13								
14								
15								
16	1 ^o ●							
17								
18								
19	2 ^o ●							
20								
21								
22								
23								
24	1 ^o ○							
25								
26								
27								
28								
29								
30								

This Table represents, at 8^h after *Mean Noon* of each day of the month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page; the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve the Satellites from each other; and their positions are such as to indicate the direct motions, which are in all cases to be considered as *towards the numerals*. *W* at its greatest elongation, the point is placed above or below the centre circle (○) at the left or right hand of the page, denotes that the Satellite is on the disc of Jupiter, and a black circle (●) that it is either *behind* or *in front* of Jupiter.

ECLIPSES OF THE SATELLITES OF JUPITER.

SATELLITE.	Day of the Month.	Mean Time.	Sidereal Time.	PHASE as seen in an inverting Telescope.
I.	2†	h m s 7 11 36·0	h m s 17 57 40·7	Em.
	4	1 40 29·8	12 33 33·2	Em.
	5	20 9 19·8	7 9 21·3	Em.
	7	14 38 14·4	1 45 15·3	Em.
	9*	9 7 2·7	20 21 2·2	Em.
	11	3 35 56·8	14 56 55·0	Em.
	12	22 4 46·5	9 32 43·4	Em.
	14	16 33 42·1	4 8 37·7	Em.
	16†	11 2 30·6	22 44 24·9	Em.
	18	5 31 24·8	17 20 17·8	Em.
	20	0 0 14·6	11 56 6·4	Em.
	21	18 29 10·4	6 32 0·9	Em.
	23	12 57 59·0	1 7 48·2	Em.
	25*	7 26 53·1	19 43 41·0	Em.
	27	1 55 42·9	14 19 29·5	Em.
28	20 24 38·4	8 55 23·7	Em.	
30	14 53 27·8	3 31 11·2	Em.	
II.	1	16 5 26·3	2 49 2·1	Em.
	5	5 23 25·2	16 21 1·7	Em.
	8	18 41 30·3	5 53 7·7	Em.
	12*	7 59 33·7	19 25 11·8	Em.
	15	21 17 45·9	8 57 24·8	Em.
	19†	10 35 53·9	22 29 33·5	Em.
	22	23 54 13·0	12 1 53·4	Em.
	26	13 12 25·0	1 34 6·2	Em.
	30	2 30 51·4	15 6 33·5	Em.
III.	2	1 32 18·7	12 17 27·6	Im.
	2	4 53 44·7	15 39 26·7	Em.
	9	5 33 8·8	16 46 33·2	Im.
	9*	8 55 9·5	20 9 7·1	Em.
	16*	9 33 29·6	21 15 9·3	Im.
	16	12 56 4·2	0 38 17·2	Em.
	23	13 33 46·9	1 43 41·9	Im.
	23	16 56 54·2	5 7 22·6	Em.
	30	17 34 15·6	6 12 26·0	Im.
30	20 57 55·8	9 36 39·7	Em.	
V.	15	16 6 30·3	3 45 18·0	Im.
	15	19 54 39·1	7 34 4·4	Em.

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APPROXIMATE SIDEREAL TIMES
 OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER,
 AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.			TRANSITS OF SATELLITES.				TRANSITS OF SHADOW.							
	Immersion.			Emission.			Ingress.		Egress.		Ingress.		Egress.		
	d	h	m	d	h	m	d	h	m	d	h	m	d	h	m
I.	2	14	33				1	17	11	1*	19	31	1†	18	17
	3	9	8				3	11	46	3	14	5	3	12	53
	5	3	43				4	6	20	4	8	39	4	7	29
	7†	22	17				6	0	55	6	3	14	6	2	5
	9	16	52				8*	19	29	8†	21	48	8*	20	40
	11	11	27				10	14	4	10	16	23	10	15	16
	12	6	2				11	8	39	11	10	58	11	9	52
	14	0	37		In		13	3	14	13	5	33	13	4	28
	16*	19	12		the		15†	21	48	15	0	8	15	23	8
	18	13	47		Shadow.		17	16	24	17*	18	43	17	17	39
	19	8	22				18	10	59	19	13	18	19	12	15
	21	2	57				20	5	34	20	7	53	20	6	51
	23†	21	33				22	0	9	22	2	28	22	1	26
	25	16	8				24†	18	44	24*	21	4	24*	20	2
	26	10	44				26	13	20	26	15	39	26	14	38
28	5	19				27	7	55	27	10	14	27	9	14	
30	23	55				29	2	31	29	4	50	29	3	50	
II.	1†	21	45				3	16	54	3*	19	48	3*	19	9
	5	11	12				6	6	22	6	9	15	6	8	41
	8	0	39		In		10*	19	51	10†	22	44	10†	22	14
	12	14	7		the		13	9	19	14	12	13	14	11	46
	15	3	36		Shadow.		17†	22	49	17	1	43	17	1	20
	19	17	5				21	12	19	21	15	13	21	14	52
	22	6	35				24	1	50	24	4	44	24	4	25
	26*	20	5				28	15	21	28†	18	14	28	17	57
29	9	36													
III.	1	7	44	2	11	12	5†	21	55	5	1	23	5	2	34
	9	11	53	9	15	21	12	2	6	12	5	34	12	7	2
	16	16	7	16*	19	35	19	6	23	19	9	51	19	11	31
	23*	20	26	23	23	54	26	10	44	27	14	13	27	16	0
30	0	49	30	4	18										
IV.	15	16	8	15*	19	47	6	8	40	7	19				
							23	2	43	23					

Day of the Month.	For correcting the Places of the Fixed Stars.				Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0 ^h .567309.	From Mean Noon of January 1.		
	At Mean Midnight,						Days.	Day of the Year.	Fraction of the Year.
	A	B	C	D					
1	+1 ^h 2417	-0 ^h 8617	+0 ^h 0033	-0 ^h 5234	13 16 51 ^s 88	162	243	665	
2	1 2444	0 8420	0 0043	0 5240	13 12 55 97	163	244	668	
3	1 2470	0 8212	0 0052	0 5244	13 9 0 06	164	245	671	
4	+1 2495	-0 7992	+0 0061	-0 5248	13 5 4 16	165	246	674	
5	1 2518	0 7759	0 0071	0 5252	13 1 8 25	166	247	676	
6	1 2540	0 7511	0 0080	0 5254	12 57 12 34	167	248	679	
7	+1 2560	-0 7247	+0 0089	-0 5256	12 53 16 43	168	249	682	
8	1 2580	0 6964	0 0098	0 5257	12 49 20 53	169	250	684	
9	1 2598	0 6660	0 0107	0 5258	12 45 24 62	170	251	687	
10	+1 2614	-0 6332	+0 0115	-0 5258	12 41 28 71	171	252	690	
11	1 2629	0 5975	0 0124	0 5257	12 37 32 80	172	253	693	
12	1 2643	0 5585	0 0133	0 5255	12 33 36 90	173	254	695	
13	+1 2656	-0 5154	+0 0141	-0 5253	12 29 40 99	174	255	698	
14	1 2667	0 4675	0 0150	0 5250	12 25 45 08	175	256	701	
15	1 2677	0 4134	0 0158	0 5246	12 21 49 17	176	257	704	
16	+1 2686	-0 3515	+0 0167	-0 5241	12 17 53 27	177	258	706	
17	1 2694	0 2790	0 0175	0 5235	12 13 57 36	178	259	709	
18	1 2700	0 1918	0 0183	0 5229	12 10 1 45	179	260	712	
19	+1 2705	-0 0823	+0 0192	-0 5222	12 6 5 54	180	261	715	
20	1 2709	9 9352	0 0200	0 5213	12 2 9 64	181	262	717	
21	1 2712	9 7108	0 0208	0 5204	11 58 13 73	182	263	720	
22	+1 2713	-9 2198	+0 0216	-0 5195	11 54 17 82	183	264	723	
23	1 2713	+9 2609	0 0224	0 5184	11 50 21 92	184	265	726	
24	1 2712	9 7249	0 0233	0 5173	11 46 26 01	185	266	728	
25	+1 2709	+9 9441	+0 0241	-0 5160	11 42 30 10	186	267	731	
26	1 2705	0 0891	0 0249	0 5147	11 38 34 19	187	268	734	
27	1 2700	0 1975	0 0257	0 5133	11 34 38 29	188	269	736	
28	+1 2694	+0 2842	+0 0265	-0 5118	11 30 42 38	189	270	739	
29	1 2686	0 3563	0 0273	0 5102	11 26 46 47	190	271	742	
30	1 2677	0 4181	0 0282	0 5085	11 22 50 57	191	272	745	
31	1 2666	+0 4721	+0 0290	-0 5067	11 18 54 66	192	273	747	

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Sidereal Time of the Semidiurn. passing the Meridian.*	Equation of Time, to be subtracted from Apparent Time.		Diff. for 1 hour.
		Apparent Right Ascension.	Diff. for 1 hour.	Apparent Declination.	Diff. for 1 hour.		m	s	
		h m s	s	° ' "	"	m s	m s	s	
Sat.	1	12 28 55.63	9.067	S. 3 7 38.5	58.30	1 4.30	10 16.49	0.770	
Sun.	2	12 32 33.23	9.080	3 30 57.7	58.21	1 4.34	10 35.40	0.774	
Mon.	3	12 36 11.16	9.094	3 54 14.7	58.09	1 4.39	10 53.98	0.776	
Tues.	4	12 39 49.41	9.109	4 17 28.9	57.96	1 4.44	11 12.22	0.776	
Wed.	5	12 43 28.02	9.124	4 40 40.0	57.82	1 4.49	11 30.12	0.771	
Thur.	6	12 47 6.99	9.140	5 3 47.6	57.65	1 4.55	11 47.66	0.715	
Frid.	7	12 50 46.34	9.156	5 26 51.3	57.48	1 4.61	12 4.81	0.690	
Sat.	8	12 54 26.09	9.174	5 49 50.8	57.28	1 4.67	12 21.57	0.690	
Sun.	9	12 58 6.26	9.192	6 12 45.6	57.07	1 4.74	12 37.90	0.663	
Mon.	10	13 1 46.85	9.210	6 35 35.4	56.85	1 4.81	12 53.82	0.645	
Tues.	11	13 5 27.90	9.230	6 58 19.8	56.61	1 4.88	13 9.29	0.625	
Wed.	12	13 9 9.11	9.250	7 20 58.5	56.36	1 4.95	13 24.29	0.605	
Thur.	13	13 12 51.40	9.271	7 43 31.1	56.08	1 5.02	13 38.81	0.584	
Frid.	14	13 16 33.91	9.293	8 5 57.1	55.80	1 5.10	13 52.82	0.563	
Sat.	15	13 20 16.93	9.316	8 28 16.3	55.50	1 5.18	14 6.31	0.540	
Sun.	16	13 24 0.50	9.340	8 50 28.2	55.18	1 5.26	14 19.26	0.516	
Mon.	17	13 27 44.65	9.364	9 12 32.6	54.85	1 5.35	14 31.64	0.491	
Tues.	18	13 31 29.38	9.389	9 34 29.1	54.50	1 5.44	14 43.43	0.466	
Wed.	19	13 35 14.71	9.415	9 56 17.2	54.15	1 5.53	14 54.62	0.440	
Thur.	20	13 39 0.68	9.442	10 17 56.8	53.77	1 5.62	15 5.17	0.415	
Frid.	21	13 42 47.29	9.470	10 39 27.2	53.38	1 5.71	15 15.09	0.386	
Sat.	22	13 46 34.56	9.498	11 0 48.2	52.97	1 5.81	15 24.35	0.357	
Sun.	23	13 50 22.52	9.528	11 21 59.5	52.54	1 5.91	15 32.91	0.328	
Mon.	24	13 54 11.19	9.558	11 43 0.5	52.10	1 6.01	15 40.78	0.298	
Tues.	25	13 58 0.58	9.588	12 3 50.9	51.64	1 6.11	15 47.93	0.267	
Wed.	26	14 1 50.70	9.620	12 24 30.3	51.17	1 6.21	15 54.34	0.236	
Thur.	27	14 5 41.58	9.652	12 44 58.4	50.68	1 6.31	16 0.00	0.205	
Frid.	28	14 9 33.22	9.684	13 5 14.6	50.17	1 6.42	16 4.91	0.173	
Sat.	29	14 13 25.64	9.717	13 25 18.7	49.64	1 6.53	16 9.99	0.142	
Sun.	30	14 17 18.85	9.750	13 45 10.0	49.09	1 6.64	16 15.33	0.110	
Mon.	31	14 21 12.84	9.783	14 4 48.2	48.53	1 6.75	16 20.92	0.078	
Tues.	32	14 25 7.64		S. 14 24 13.0		1 6.86	16 26.75	0.046	

* Mean Time of the Semidiameter passing may be found by subtracting ...

AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S			Equation of Time, to be added to Mean Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semidian.*		
Sat.	1	h m s 12 28 57·18	S. ° ' " 3 7 48·5	16 0·5	m s 10 16·63	h m s 12 39 13·81
Sun.	2	12 32 34·83	3 31 8·0	16 0·8	10 35·54	12 43 10·37
Mon.	3	12 36 12·81	3 54 25·2	16 1·1	10 54·12	12 47 6·92
Tues.	4	12 39 51·11	4 17 39·7	16 1·4	11 12·36	12 51 3·47
Wed.	5	12 43 29·77	4 40 51·1	16 1·7	11 30·26	12 55 0·03
Thur.	6	12 47 8·78	5 3 58·9	16 1·9	11 47·80	12 58 56·58
Frid.	7	12 50 48·18	5 27 2·9	16 2·2	12 4·95	13 2 53·13
Sat.	8	12 54 27·98	5 50 2·6	16 2·5	12 21·71	13 6 49·69
Sun.	9	12 58 8·19	6 12 57·6	16 2·8	12 38·05	13 10 46·24
Mon.	10	13 1 48·83	6 35 47·7	16 3·0	12 53·96	13 14 42·79
Tues.	11	13 5 29·92	6 58 32·3	16 3·3	13 9·43	13 18 39·35
Wed.	12	13 9 11·47	7 21 11·1	16 3·6	13 24·43	13 22 35·90
Thur.	13	13 12 53·51	7 43 43·8	16 3·8	13 38·94	13 26 32·45
Frid.	14	13 16 36·06	8 6 10·0	16 4·1	13 52·95	13 30 29·01
Sat.	15	13 20 19·12	8 28 29·3	16 4·4	14 6·44	13 34 25·56
Sun.	16	13 24 2·73	8 50 41·4	16 4·7	14 19·39	13 38 22·12
Mon.	17	13 27 46·91	9 12 46·0	16 4·9	14 31·76	13 42 18·67
Tues.	18	13 31 31·68	9 34 42·5	16 5·2	14 43·54	13 46 15·22
Wed.	19	13 35 17·05	9 56 30·7	16 5·5	14 54·73	13 50 11·78
Thur.	20	13 39 3·05	10 18 10·3	16 5·7	15 5·28	13 54 8·33
Frid.	21	13 42 49·69	10 39 40·8	16 6·0	15 15·19	13 58 4·88
Sat.	22	13 46 37·00	11 1 1·9	16 6·2	15 24·44	14 2 1·44
Sun.	23	13 50 24·99	11 22 13·1	16 6·5	15 33·00	14 5 57·99
Mon.	24	13 54 13·69	11 43 14·1	16 6·8	15 40·86	14 9 54·55
Tues.	25	13 58 3·10	12 4 4·6	16 7·0	15 48·00	14 13 51·10
Wed.	26	14 1 53·25	12 24 44·0	16 7·3	15 54·41	14 17 47·66
Thur.	27	14 5 44·15	12 45 11·9	16 7·5	16 0·06	14 21 44·21
Frid.	28	14 9 35·81	13 5 28·1	16 7·8	16 4·96	14 25 40·77
Sat.	29	14 13 28·25	13 25 32·1	16 8·1	16 9·07	14 29 37·32
Sun.	30	14 17 21·48	13 45 23·3	16 8·3	16 12·40	14 33 33·87
Mon.	31	14 21 15·48	14 5 1·5	16 8·6	16 14·95	14 37 30·43
		14 25 10·30	S. 14 24 26·1	16 8·8	16 16·69	14 41 26·99

*Mnemonic for Apparent Noon may be assumed the same as that for Mean Noon.

MEAN TIME.

THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S				
Longitude.	Latitude.		Semidiameter.		Horizontal Parallax.		
<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>	
187 52 57 9	S. 0 76	9 0001873	16 29 9	16 33 8	60 32 7	60 46 3	Sa
188 52 5 0	0 84	9 0000637	16 36 5	16 38 1	60 57 0	61 2 9	Su
189 51 14 3	0 90	9 9999394	16 38 6	16 37 7	61 4 5	61 1 2	Mo
190 50 25 7	0 93	9 9998144	16 35 5	16 32 1	60 53 1	60 40 8	Tu
191 49 39 2	0 93	9 9996888	16 27 7	16 22 2	60 24 4	60 4 3	We
192 48 54 6	0 90	9 9995626	16 15 9	16 8 8	59 41 1	59 15 4	Thu
193 48 11 9	0 84	9 9994359	16 1 4	15 53 7	58 48 2	58 19 2	Fri
194 47 31 2	0 75	9 9993088	15 46 0	15 38 2	57 51 4	57 23 0	Sat.
195 46 52 3	0 64	9 9991814	15 30 7	15 23 6	56 55 5	56 29 4	Sun.
196 46 15 2	0 52	9 9990540	15 16 9	15 10 7	56 4 8	55 42 9	Mon.
197 45 39 8	0 38	9 9989266	15 5 1	15 0 2	55 21 6	55 3 6	Tues.
198 45 6 2	0 25	9 9987993	14 55 9	14 52 3	54 47 8	54 34 6	Wed.
199 44 34 4	0 12	9 9986724	14 49 3	14 47 0	54 23 6	54 15 4	Thur.
200 44 4 3	S. 0 01	9 9985460	14 45 4	14 44 2	54 9 0	54 4 9	Frid.
201 43 35 9	N. 0 09	9 9984202	14 43 7	14 43 7	54 2 9	54 2 9	Sat.
202 43 9 4	0 17	9 9982952	14 44 2	14 45 1	54 4 8	54 8 2	Sun.
203 42 44 8	0 20	9 9981712	14 46 5	14 48 2	54 13 2	54 19 5	Mon.
204 42 22 1	0 22	9 9980482	14 50 3	14 52 6	54 27 1	54 35 7	Tues.
205 42 1 4	0 21	9 9979262	14 55 3	14 58 3	54 45 5	54 56 4	Wed.
206 41 42 7	0 17	9 9978054	15 1 4	15 4 7	55 7 9	55 20 1	Thur.
207 41 26 1	N. 0 09	9 9976858	15 8 3	15 12 0	55 33 2	55 46 9	Frid.
208 41 11 5	S. 0 01	9 9975675	15 15 9	15 19 9	56 1 1	56 15 9	Sat.
209 40 59 1	0 12	9 9974503	15 24 1	15 28 5	56 31 1	56 47 2	Sun.
210 40 48 9	0 25	9 9973341	15 32 9	15 37 5	57 3 6	57 20 4	Mon.
211 40 40 9	0 39	9 9972189	15 42 2	15 47 0	57 37 5	57 55 3	Tues.
212 40 35 1	0 52	9 9971047	15 51 8	15 56 7	58 12 9	58 30 9	Wed.
213 40 31 5	0 64	9 9969913	16 1 5	16 6 3	58 48 5	59 5 9	Thur.
214 40 30 2	0 75	9 9968786	16 10 7	16 14 8	59 22 2	59 37 4	Frid.
215 40 31 1	0 84	9 9967666	16 18 5	16 21 7	59 50 9	60 2 4	Sat.
216 40 34 1	0 90	9 9966552	16 24 2	16 25 9	60 11 6	60 17 9	Sun.
217 40 39 1	0 93	9 9965444	16 26 7	16 26 5	60 20 3	60 26 3	Mon.
218 40 46 2	S. 0 94	9 9964341	16 25 3	16 25 3			Tues.

MEAN TIME.

		THE MOON'S										
Day of the Week.	Day of the Month.	Longitude.				Latitude.				Age.		Meridia Passag
		Noon.		Midnight.		Noon.		Midnight.		Noon.	Passag	
		°	'	°	'	°	'	°	'	d	h	
at.	1	148	46 29	156	14 47	S. 3	20 12	S. 3	47 47	26	6	23 6
un.	2	163	46 50	171	21 32	4	11 36	4	31 7	27	6	23 59
lon.	3	178	57 40	186	33 51	4	45 53	4	55 33	28	6	23 52
Tues.	4	194	8 42	201	40 53	5	0 0	4	59 11	0	2	6
Wed.	5	209	9 5	216	32 13	4	53 14	4	42 24	1	2	0 48
Thur.	6	223	49 20	230	59 44	4	27 5	4	7 44	2	2	1 44
Frid.	7	238	2 56	244	58 41	3	44 52	3	19 2	3	2	2 43
Sat.	8	251	46 56	258	27 51	2	50 45	2	20 36	4	2	3 41
Sun.	9	265	1 42	271	28 55	1	49 4	1	16 36	5	2	4 37
Mon.	10	277	50 3	284	2 40	S. 0	43 41	S. 0	10 41	6	2	5 31
Tues.	11	290	16 25	296	22 58	N. 0	21 59	N. 0	54 3	7	2	6 21
Wed.	12	302	25 59	308	26 9	1	25 11	1	55 7	8	2	7 8
Thur.	13	314	24 4	320	20 24	2	23 33	2	50 17	9	2	7 51
Frid.	14	326	15 42	332	10 30	3	15 4	3	37 41	10	2	8 33
Sat.	15	338	5 17	344	0 29	3	57 56	4	15 36	11	2	9 13
Sun.	16	349	56 30	355	53 39	4	30 32	4	42 32	12	2	9 53
Mon.	17	1	52 12	7	52 23	4	51 29	4	57 14	13	2	10 34
Tues.	18	13	54 23	19	58 20	4	59 40	4	58 43	14	2	11 16
Wed.	19	26	4 20	32	12 29	4	54 22	4	46 33	15	2	12 1
Thur.	20	38	22 51	44	35 28	4	35 21	4	20 46	16	2	12 48
Frid.	21	50	50 25	57	7 46	4	2 58	3	42 4	17	2	13 39
Sat.	22	63	27 37	69	50 6	3	18 15	2	51 45	18	2	14 32
Sun.	23	76	15 23	82	43 37	2	22 52	1	51 52	19	2	15 27
Mon.	24	89	15 3	95	49 55	1	19 6	N. 0	44 58	20	2	16 23
Tues.	25	102	28 30	109	11 1	N. 0	9 53	S. 0	25 43	21	2	17 18
Wed.	26	115	57 45	122	48 54	S. 1	1 19	1	36 27	22	2	18 12
Thur.	27	129	44 40	136	45 7	2	10 33	2	43 3	23	2	19 4
Frid.	28	143	50 16	150	59 59	3	13 25	3	41 3	24	2	19 55
Sat.	29	158	14 0	165	31 56	4	5 24	4	25 59	25	2	20 46
Sun.	30	172	53 9	180	16 57	4	42 19	4	54 1	26	2	21 37
Mon.	31	187	42 26	195	8 36	5	0 49	5	2 32	27	2	22 31
	32	202	34 20	209	58 34	S. 4	59 9	S. 4	50 45	28	2	23 26

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

hr.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff.
SATURDAY 1.				MONDAY 3.			
h	m	s	"	h	m	s	"
9	58	59	28	0	11	48	35
10	1	16	86	1	11	50	53
10	3	34	36	2	11	53	11
10	5	51	79	3	11	55	28
10	8	9	16	4	11	57	46
10	10	26	45	5	12	0	5
10	12	43	69	6	12	2	23
10	15	0	87	7	12	4	41
10	17	17	99	8	12	7	0
10	19	35	06	9	12	9	18
10	21	52	07	10	12	11	37
10	24	9	04	11	12	13	56
10	26	25	98	12	12	16	14
10	28	42	86	13	12	18	33
10	30	59	71	14	12	20	53
10	33	16	53	15	12	23	12
10	35	33	31	16	12	25	31
10	37	50	07	17	12	27	51
10	40	6	80	18	12	30	10
10	42	23	52	19	12	32	30
10	44	40	22	20	12	34	50
10	46	56	90	21	12	37	10
10	49	13	58	22	12	39	30
10	51	30	25	23	12	41	51
SUNDAY 2.				TUESDAY 4.			
h	m	s	"	h	m	s	"
10	53	46	92	0	12	44	11
10	56	3	59	1	12	46	32
10	58	20	27	2	12	48	53
11	0	36	95	3	12	51	14
11	2	53	65	4	12	53	35
11	5	10	36	5	12	55	56
11	7	27	09	6	12	58	17
11	9	43	85	7	13	0	39
11	12	0	63	8	13	3	1
11	14	17	43	9	13	5	23
11	16	34	28	10	13	7	45
11	18	51	15	11	13	10	7
11	21	8	07	12	13	12	29
11	23	25	03	13	13	14	52
11	25	42	03	14	13	17	15
11	27	59	09	15	13	19	38
11	30	16	20	16	13	22	1
11	32	33	36	17	13	24	24
11	34	50	59	18	13	26	47
11	37	7	88	19	13	29	11
11	39	25	24	20	13	31	35
11	41	42	68	21	13	33	59
11	44	0	18	22	13	36	23
11	46	17	77	23	13	38	47
11	48	35	43	24	13	41	11
S. 8 46 48 0				S. 3 57 24 5			
151 05				160			
151 67				160			
152 27				160			
152 85				160			
153 43				160			
153 97				160			
154 82				160			
155 02				160			
155 53				160			
156 00				160			
156 47				160			
156 92				160			
157 33				160			
157 75				160			
158 15				160			
158 52				160			
158 88				160			
159 22				160			
159 58				160			
159 85				160			
160 12				160			
160 40				160			
160 65				160			
160 87				160			
N. 2 30 42 3				S. 10 11 15 9			
161 08				160 77			
161 30				160 70			
161 45				160 70			
161 62				160 70			
161 75				160 70			
161 87				160 70			
161 98				160 70			
162 05				160 70			
162 10				160 70			
162 17				160 70			
162 17				160 70			
162 18				160 70			
162 17				160 70			
162 13				160 70			
162 07				160 70			
162 02				160 70			
161 90				160 70			
161 80				160 70			
161 67				160 70			
161 52				160 70			
161 33				160 70			
161 15				160 70			
160 95				160 70			
160 72				160 70			
S. 3 57 24 5				S. 1			

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10".	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10".
<i>WEDNESDAY 5.</i>				<i>FRIDAY 7.</i>			
	<i>h m s</i>	<i>° ' "</i>	<i>"</i>		<i>h m s</i>	<i>° ' "</i>	<i>"</i>
0	13 41 11.82	S. 15 44 46.9	126.62	0	15 39 30.08	S. 23 23 37.3	59.45
1	13 43 36.42	15 57 26.6	125.47	1	15 42 0.10	23 29 34.0	57.88
2	13 46 1.19	16 9 59.4	124.35	2	15 44 30.13	23 35 21.3	56.28
3	13 48 26.13	16 22 25.5	123.17	3	15 47 0.17	23 40 59.0	54.70
4	13 50 51.24	16 34 44.5	122.02	4	15 49 30.20	23 46 27.2	53.12
5	13 53 16.52	16 46 56.6	120.82	5	15 52 0.23	23 51 45.9	51.52
6	13 55 41.96	16 59 1.5	119.62	6	15 54 30.25	23 56 55.0	49.93
7	13 58 7.56	17 10 59.2	118.42	7	15 57 0.26	24 1 54.6	48.33
8	14 0 33.33	17 22 49.7	117.17	8	15 59 30.24	24 6 44.6	46.78
9	14 2 59.26	17 34 32.7	115.95	9	16 2 0.19	24 11 25.0	45.15
10	14 5 25.35	17 46 8.4	114.67	10	16 4 30.10	24 15 55.9	43.58
11	14 7 51.60	17 57 36.4	113.42	11	16 6 59.98	24 20 17.1	41.95
12	14 10 18.02	18 8 56.9	112.13	12	16 9 29.80	24 24 28.8	40.35
13	14 12 44.59	18 20 9.7	110.83	13	16 11 59.57	24 28 30.9	38.78
14	14 15 11.30	18 31 14.7	109.52	14	16 14 29.28	24 32 23.3	37.15
15	14 17 38.18	18 42 11.8	108.22	15	16 16 58.93	24 36 6.2	35.57
16	14 20 5.20	18 53 1.1	106.88	16	16 19 28.50	24 39 39.6	33.95
17	14 22 32.36	19 3 42.4	105.53	17	16 21 58.00	24 43 3.3	32.37
18	14 24 59.68	19 14 15.6	104.18	18	16 24 27.41	24 46 17.5	30.78
19	14 27 27.13	19 24 40.7	102.82	19	16 26 56.74	24 49 22.2	29.18
20	14 29 54.73	19 34 57.6	101.43	20	16 29 25.96	24 52 17.3	27.60
21	14 32 22.46	19 45 6.2	100.07	21	16 31 55.09	24 55 2.9	26.02
22	14 34 50.33	19 55 6.6	98.65	22	16 34 24.11	24 57 39.0	24.43
23	14 37 18.33	S. 20 4 58.5	97.25	23	16 36 53.01	S. 25 0 5.6	22.85
<i>THURSDAY 6.</i>				<i>SATURDAY 8.</i>			
	<i>h m s</i>	<i>° ' "</i>	<i>"</i>		<i>h m s</i>	<i>° ' "</i>	<i>"</i>
0	14 39 46.45	S. 20 14 42.0	95.83	0	16 39 21.79	S. 25 2 22.7	21.28
1	14 42 14.71	20 24.17.0	94.40	1	16 41 50.45	25 4 30.4	19.70
2	14 44 43.09	20 33 43.4	92.97	2	16 44 18.98	25 6 28.6	18.15
3	14 47 11.59	20 43 1.2	91.53	3	16 46 47.37	25 8 17.5	16.57
4	14 49 40.20	20 52 10.4	90.07	4	16 49 15.62	25 9 56.9	15.02
5	14 52 8.92	21 1 10.8	88.60	5	16 51 43.71	25 11 27.0	13.47
6	14 54 37.75	21 10 2.4	87.12	6	16 54 11.65	25 12 47.8	11.90
7	14 57 6.68	21 18 45.1	85.65	7	16 56 39.43	25 13 59.2	10.37
8	14 59 35.71	21 27 19.0	84.15	8	16 59 7.05	25 15 1.4	8.82
9	15 2 4.84	21 35 43.9	82.65	9	17 1 34.49	25 15 54.3	7.28
10	15 4 34.06	21 43 59.8	81.17	10	17 4 1.75	25 16 38.0	5.75
11	15 7 3.37	21 52 6.8	79.63	11	17 6 28.84	25 17 12.5	4.22
12	15 9 32.76	22 0 4.6	78.12	12	17 8 55.72	25 17 37.8	2.70
13	15 12 2.22	22 7 53.3	76.58	13	17 11 22.42	25 17 54.0	1.18
14	15 14 31.76	22 15 32.8	75.07	14	17 13 48.92	25 18 1.1	0.33
15	15 17 1.36	22 23 3.2	73.52	15	17 16 15.21	25 17 59.1	1.82
16	15 19 31.03	22 30 24.3	71.98	16	17 18 41.29	25 17 48.2	3.32
17	15 22 0.76	22 37 36.2	70.42	17	17 21 7.16	25 17 28.3	4.82
18	15 24 30.54	22 44 38.7	68.88	18	17 23 32.80	25 16 59.4	6.30
19	15 27 0.37	22 51 32.0	67.32	19	17 25 58.23	25 16 21.6	7.77
20	15 29 30.25	22 58 15.9	65.75	20	17 28 23.42	25 15 35.0	9.23
21	15	23 4 50.4	64.17	21	17 30 48.37	25 14 39.6	10.70
22	15	'1 15.4	62.62	22	17 33 13.09	25 13 35.4	12.13
23	1	31.1	61.03	23	17 35 37.56	25 12 22.6	13.60
24	1			24	17 38 1.78	S. 25 11 1.0	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .
SUNDAY 9.				TUESDAY 11.			
0	17 38 1 ^h 78 ^m	S. 25 11 1 ^o 0 ⁿ	15 03	0	19 27 29 ^h 99 ^m	S. 21 33 58 ^o 8 ⁿ	
1	17 40 25 75	25 9 30 8	16 45	1	19 29 38 73	21 26 42 2	
2	17 42 49 47	25 7 52 1	17 28	2	19 31 47 13	21 19 19 9	
3	17 45 12 92	25 6 4 8	19 28	3	19 33 55 19	21 11 51 9	
4	17 47 36 11	25 4 9 1	20 70	4	19 36 2 92	21 4 18 4	
5	17 49 59 02	25 2 4 9	22 08	5	19 38 10 31	20 56 39 3	
6	17 52 21 66	24 59 52 4	23 47	6	19 40 17 37	20 48 54 7	
7	17 54 44 03	24 57 31 6	24 35	7	19 42 24 10	20 41 4 8	
8	17 57 6 11	24 55 2 5	26 22	8	19 44 30 49	20 33 9 4	
9	17 59 27 91	24 52 25 2	27 57	9	19 46 36 56	20 25 8 8	
10	18 1 49 42	24 49 39 8	28 32	10	19 48 42 30	20 17 3 0	
11	18 4 10 64	24 46 46 3	30 27	11	19 50 47 71	20 8 51 9	
12	18 6 31 56	24 43 44 7	31 58	12	19 52 52 80	20 0 35 8	
13	18 8 52 18	24 40 35 2	32 32	13	19 54 57 56	19 52 14 6	
14	18 11 12 50	24 37 17 7	34 22	14	19 57 2 00	19 43 48 5	
15	18 13 32 52	24 33 58 4	35 52	15	19 59 6 12	19 35 17 4	
16	18 15 52 22	24 30 19 3	36 30	16	20 1 9 93	19 26 41 4	
17	18 18 11 62	24 26 38 5	38 10	17	20 3 13 41	19 18 0 6	
18	18 20 30 71	24 22 49 9	39 37	18	20 5 16 58	19 9 15 0	
19	18 22 49 48	24 18 53 7	40 62	19	20 7 19 44	19 0 24 7	
20	18 25 7 94	24 14 50 0	41 38	20	20 9 21 99	18 51 29 8	
21	18 27 26 07	24 10 38 7	43 12	21	20 11 24 23	18 42 30 3	
22	18 29 43 88	24 6 20 0	44 35	22	20 13 26 16	18 33 26 2	
23	18 32 1 37	S. 24 1 53 9	45 58	23	20 15 27 79	S. 18 24 17 7	
MONDAY 10.				WEDNESDAY 12.			
0	18 34 18 54	S. 23 57 20 4	46 78	0	20 17 29 18	S. 18 15 4 7	
1	18 36 35 38	23 52 39 7	48 00	1	20 19 30 15	18 5 47 3	
2	18 38 51 89	23 47 51 7	49 18	2	20 21 30 88	17 56 25 7	
3	18 41 8 08	23 42 56 6	50 37	3	20 23 31 32	17 46 59 7	
4	18 43 23 92	23 37 54 4	51 53	4	20 25 31 46	17 37 29 6	
5	18 45 39 44	23 32 45 2	52 68	5	20 27 31 32	17 27 55 2	
6	18 47 54 62	23 27 29 1	53 35	6	20 29 30 89	17 18 16 8	
7	18 50 9 47	23 22 6 0	54 98	7	20 31 30 17	17 8 34 4	
8	18 52 23 99	23 16 36 1	56 12	8	20 33 29 17	16 58 47 9	
9	18 54 38 16	23 10 59 4	57 23	9	20 35 27 89	16 48 57 6	
10	18 56 52 00	23 5 16 0	58 33	10	20 37 26 34	16 39 3 3	
11	18 59 5 50	22 59 26 0	59 45	11	20 39 24 51	16 29 5 2	
12	19 1 18 66	22 53 29 3	60 52	12	20 41 22 41	16 19 3 3	
13	19 3 31 46	22 47 26 2	61 60	13	20 43 20 04	16 8 57 7	
14	19 5 43 95	22 41 16 6	62 67	14	20 45 17 41	15 58 48 4	
15	19 7 56 09	22 35 0 6	63 72	15	20 47 14 51	15 48 35 5	
16	19 10 7 88	22 28 38 3	64 77	16	20 49 11 36	15 38 19 0	
17	19 12 19 34	22 22 9 7	65 82	17	20 51 7 95	15 27 59 0	
18	19 14 30 45	22 15 34 8	66 82	18	20 53 4 04	15 17 35 5	
19	19 16 41 22	22 8 53 9	67 85	19	20 5 5 57		
20	19 18 51 66	22 2 6 8	68 85	20	20 7 7 50		
21	19 21 1 75	21 55 13 7	69 85	21	20 9 9 42		
22	19 23 11 50	21 48 14 6	70 83	22	20 11 11 34		
23	19 25 20 92	21 41 9 6	71 80	23	20 13 13 25		
24	19 27 29 99	S. 21 33 58 8		24	20 15 15 16		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
THURSDAY 13.				SATURDAY 15.			
0	21 4 37.15	S. 14 14 4.5	107.73	0	22 33 2.65	S. 4 51 46.9	124.17
1	21 6 31.80	14 3 18.1	108.25	1	22 34 50.28	4 39 21.9	124.33
2	21 8 26.22	13 52 28.6	108.75	2	22 36 37.85	4 26 55.9	124.62
3	21 10 20.42	13 41 36.1	109.27	3	22 38 25.37	4 14 28.8	124.67
4	21 12 14.40	13 30 40.5	109.75	4	22 40 12.83	4 2 0.8	124.82
5	21 14 8.16	13 19 42.0	110.22	5	22 42 0.25	3 49 31.9	124.97
6	21 16 1.70	13 8 40.7	110.72	6	22 43 47.63	3 37 2.1	125.10
7	21 17 55.03	12 57 36.4	111.17	7	22 45 34.96	3 24 31.5	125.23
8	21 19 48.16	12 46 29.4	111.63	8	22 47 22.26	3 12 0.1	125.35
9	21 21 41.08	12 35 19.6	112.08	9	22 49 9.58	2 59 26.0	125.48
10	21 23 33.80	12 24 7.1	112.53	10	22 50 56.77	2 46 55.1	125.58
11	21 25 26.32	12 12 51.9	112.97	11	22 52 43.98	2 34 21.6	125.70
12	21 27 18.65	12 1 34.1	113.40	12	22 54 31.17	2 21 47.4	125.80
13	21 29 10.78	11 50 13.7	113.82	13	22 56 18.34	2 9 12.6	125.88
14	21 31 2.73	11 38 50.8	114.25	14	22 58 5.50	1 56 37.8	125.97
15	21 32 54.50	11 27 25.3	114.65	15	22 59 52.65	1 44 1.5	126.05
16	21 34 46.08	11 15 57.4	115.05	16	23 1 39.79	1 31 25.2	126.12
17	21 36 37.49	11 4 27.1	115.43	17	23 3 26.93	1 18 48.5	126.20
18	21 38 28.72	10 52 54.5	115.83	18	23 5 14.07	1 6 11.3	126.28
19	21 40 19.78	10 41 19.5	116.20	19	23 7 1.21	0 53 33.9	126.30
20	21 42 10.68	10 29 48.3	116.58	20	23 8 48.36	0 40 56.1	126.38
21	21 44 1.41	10 18 2.8	116.95	21	23 10 35.53	0 28 18.0	126.35
22	21 45 51.98	10 6 21.1	117.30	22	23 12 22.71	0 15 39.7	126.42
23	21 47 42.40	S. 9 54 37.3	117.65	23	23 14 9.90	S. 0 3 1.2	126.43
FRIDAY 14.				SUNDAY 16.			
0	21 49 32.67	S. 9 42 51.4	118.00	0	23 15 57.12	N. 0 9 37.4	126.45
1	21 51 22.79	9 31 3.4	118.32	1	23 17 44.37	0 22 16.1	126.48
2	21 53 12.76	9 19 13.5	118.67	2	23 19 31.64	0 34 55.0	126.47
3	21 55 2.59	9 7 21.5	118.98	3	23 21 18.95	0 47 33.8	126.47
4	21 56 52.28	8 55 27.6	119.30	4	23 23 6.30	1 0 12.6	126.47
5	21 58 41.84	8 43 31.8	119.60	5	23 24 53.68	1 12 51.4	126.43
6	22 0 31.26	8 31 34.2	119.92	6	23 26 41.11	1 25 30.0	126.42
7	22 2 20.56	8 19 34.7	120.20	7	23 28 28.59	1 38 8.5	126.40
8	22 4 9.74	8 7 33.5	120.48	8	23 30 16.12	1 50 46.9	126.35
9	22 5 58.79	7 55 30.6	120.77	9	23 32 3.70	2 3 25.0	126.30
10	22 7 47.73	7 43 26.0	121.05	10	23 33 51.34	2 16 2.8	126.25
11	22 9 36.55	7 31 19.7	121.32	11	23 35 39.04	2 28 40.3	126.20
12	22 11 25.27	7 19 11.8	121.58	12	23 37 26.79	2 41 17.5	126.18
13	22 13 13.88	7 7 2.3	121.82	13	23 39 14.62	2 53 54.3	126.05
14	22 15 2.38	6 54 51.4	122.08	14	23 41 2.53	3 6 30.6	125.97
15	22 16 50.79	6 42 38.9	122.32	15	23 42 50.51	3 19 6.4	125.88
16	22 18 39.11	6 30 25.0	122.55	16	23 44 38.57	3 31 41.7	125.80
17	22 20 27.33	6 18 9.7	122.77	17	23 46 26.71	3 44 16.5	125.68
18	22 22 15.46	6 5 53.1	123.00	18	23 48 14.94	3 56 50.6	125.57
19	22 24 3.51	5 53 35.1	123.22	19	23 50 3.25	4 9 24.0	125.47
20	22 25 51.48	5 41 15.8	123.42	20	23 51 51.67	4 21 56.8	125.33
21	22 27 39.82	5 28 55.3	123.60	21	23 53 40.17	4 34 28.8	125.20
22	22 29 28.17	5 16 33.7	123.82	22	23 55 28.78	4 47 0.0	125.07
23	22 31 16.40	5 4 10.8	123.98	23	23 57 17.50	4 59 30.4	124.93
24	22 33 4.63	4 51 46.0	124.10	24	23 59 6.21	N. 5 11 50.0	124.78

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .
MONDAY 17.				WEDNESDAY 19.			
0	23 59 6 ^{h m s} .31	N. 5 11 59 ^{o ' " "} .9	124 ^{''} .77	0	1 29 19 ^{h m s} .94	N.14 38 33 ^{o ' " "} .-1	107 ^{''} .45
1	0 0 55 ^{h m s} .24	5 24 28 ^{o ' "} .5	124 ^{''} .60	1	1 31 17 ^{h m s} .92	14 49 19 ^{o ' "} .0	107 ^{''} .75
2	0 2 44 ^{h m s} .28	5 36 56 ^{o ' "} .1	124 ^{''} .43	2	1 33 16 ^{h m s} .15	15 0 1 ^{o ' "} .-4	106 ^{''} .35
3	0 4 33 ^{h m s} .44	5 49 22 ^{o ' "} .7	124 ^{''} .25	3	1 35 14 ^{h m s} .65	15 10 40 ^{o ' "} .-4	106 ^{''} .35
4	0 6 22 ^{h m s} .73	6 1 48 ^{o ' "} .2	124 ^{''} .08	4	1 37 13 ^{h m s} .41	15 21 15 ^{o ' "} .-7	105 ^{''} .25
5	0 8 12 ^{h m s} .13	6 14 12 ^{o ' "} .7	123 ^{''} .87	5	1 39 12 ^{h m s} .43	15 31 47 ^{o ' "} .-4	104 ^{''} .65
6	0 10 1 ^{h m s} .67	6 26 35 ^{o ' "} .9	123 ^{''} .68	6	1 41 11 ^{h m s} .71	15 42 15 ^{o ' "} .-4	104 ^{''} .45
7	0 11 51 ^{h m s} .33	6 38 58 ^{o ' "} .0	123 ^{''} .47	7	1 43 11 ^{h m s} .26	15 52 39 ^{o ' "} .-7	103 ^{''} .45
8	0 13 41 ^{h m s} .13	6 51 18 ^{o ' "} .8	123 ^{''} .25	8	1 45 11 ^{h m s} .08	16 3 0 ^{o ' "} .-2	102 ^{''} .77
9	0 15 31 ^{h m s} .07	7 3 38 ^{o ' "} .3	123 ^{''} .02	9	1 47 11 ^{h m s} .17	16 13 16 ^{o ' "} .-8	102 ^{''} .55
10	0 17 21 ^{h m s} .15	7 15 56 ^{o ' "} .4	122 ^{''} .80	10	1 49 11 ^{h m s} .54	16 23 29 ^{o ' "} .5	101 ^{''} .45
11	0 19 11 ^{h m s} .37	7 28 13 ^{o ' "} .2	122 ^{''} .55	11	1 51 12 ^{h m s} .18	16 33 38 ^{o ' "} .-2	100 ^{''} .77
12	0 21 1 ^{h m s} .75	7 40 28 ^{o ' "} .5	122 ^{''} .30	12	1 53 13 ^{h m s} .10	16 43 42 ^{o ' "} .-8	100 ^{''} .15
13	0 22 52 ^{h m s} .28	7 52 42 ^{o ' "} .3	122 ^{''} .05	13	1 55 14 ^{h m s} .29	16 53 43 ^{o ' "} .4	99 ^{''} .45
14	0 24 42 ^{h m s} .95	8 4 54 ^{o ' "} .6	121 ^{''} .77	14	1 57 15 ^{h m s} .77	17 3 39 ^{o ' "} .-8	98 ^{''} .45
15	0 26 33 ^{h m s} .79	8 17 5 ^{o ' "} .2	121 ^{''} .52	15	1 59 17 ^{h m s} .52	17 13 31 ^{o ' "} .-9	97 ^{''} .45
16	0 28 24 ^{h m s} .79	8 29 14 ^{o ' "} .3	121 ^{''} .22	16	2 1 19 ^{h m s} .56	17 23 19 ^{o ' "} .-8	97 ^{''} .25
17	0 30 15 ^{h m s} .95	8 41 21 ^{o ' "} .6	120 ^{''} .93	17	2 3 21 ^{h m s} .88	17 33 3 ^{o ' "} .3	96 ^{''} .25
18	0 32 7 ^{h m s} .28	8 53 27 ^{o ' "} .2	120 ^{''} .63	18	2 5 24 ^{h m s} .49	17 42 42 ^{o ' "} .4	95 ^{''} .77
19	0 33 58 ^{h m s} .78	9 5 31 ^{o ' "} .0	120 ^{''} .33	19	2 7 27 ^{h m s} .39	17 52 17 ^{o ' "} .0	95 ^{''} .45
20	0 35 50 ^{h m s} .45	9 17 33 ^{o ' "} .0	120 ^{''} .02	20	2 9 30 ^{h m s} .58	18 1 47 ^{o ' "} .1	94 ^{''} .25
21	0 37 42 ^{h m s} .30	9 29 33 ^{o ' "} .1	119 ^{''} .70	21	2 11 34 ^{h m s} .05	18 11 12 ^{o ' "} .-6	93 ^{''} .45
22	0 39 34 ^{h m s} .33	9 41 31 ^{o ' "} .3	119 ^{''} .37	22	2 13 37 ^{h m s} .82	18 20 33 ^{o ' "} .5	92 ^{''} .45
23	0 41 26 ^{h m s} .55	N. 9 53 27 ^{o ' "} .5	119 ^{''} .02	23	2 15 41 ^{h m s} .87	N.18 29 49 ^{o ' "} .-6	91 ^{''} .25
TUESDAY 18.				THURSDAY 20.			
0	0 43 18 ^{h m s} .95	N.10 5 21 ^{o ' "} .6	118 ^{''} .67	0	2 17 46 ^{h m s} .22	N.18 39 0 ^{o ' "} .9	91 ^{''} .45
1	0 45 11 ^{h m s} .54	10 17 13 ^{o ' "} .6	118 ^{''} .33	1	2 19 50 ^{h m s} .86	18 48 7 ^{o ' "} .4	90 ^{''} .25
2	0 47 4 ^{h m s} .32	10 29 3 ^{o ' "} .6	117 ^{''} .95	2	2 21 55 ^{h m s} .80	18 57 8 ^{o ' "} .9	89 ^{''} .45
3	0 48 57 ^{h m s} .29	10 40 51 ^{o ' "} .3	117 ^{''} .57	3	2 24 1 ^{h m s} .04	19 6 5 ^{o ' "} .5	88 ^{''} .25
4	0 50 50 ^{h m s} .47	10 52 36 ^{o ' "} .7	117 ^{''} .20	4	2 26 6 ^{h m s} .57	19 14 57 ^{o ' "} .0	87 ^{''} .75
5	0 52 43 ^{h m s} .84	11 4 19 ^{o ' "} .9	116 ^{''} .82	5	2 28 12 ^{h m s} .40	19 23 43 ^{o ' "} .4	86 ^{''} .45
6	0 54 37 ^{h m s} .42	11 16 0 ^{o ' "} .8	116 ^{''} .40	6	2 30 18 ^{h m s} .52	19 32 24 ^{o ' "} .7	86 ^{''} .45
7	0 56 31 ^{h m s} .20	11 27 39 ^{o ' "} .2	116 ^{''} .00	7	2 32 24 ^{h m s} .95	19 41 0 ^{o ' "} .8	85 ^{''} .15
8	0 58 25 ^{h m s} .20	11 39 15 ^{o ' "} .2	115 ^{''} .57	8	2 34 31 ^{h m s} .67	19 49 31 ^{o ' "} .6	84 ^{''} .25
9	1 0 19 ^{h m s} .41	11 50 48 ^{o ' "} .6	115 ^{''} .17	9	2 36 38 ^{h m s} .69	19 57 57 ^{o ' "} .1	83 ^{''} .35
10	1 2 13 ^{h m s} .83	12 2 19 ^{o ' "} .6	114 ^{''} .72	10	2 38 46 ^{h m s} .01	20 6 17 ^{o ' "} .1	82 ^{''} .45
11	1 4 8 ^{h m s} .47	12 13 47 ^{o ' "} .9	114 ^{''} .27	11	2 40 53 ^{h m s} .63	20 14 31 ^{o ' "} .7	81 ^{''} .25
12	1 6 3 ^{h m s} .34	12 25 13 ^{o ' "} .5	113 ^{''} .82	12	2 43 1 ^{h m s} .54	20 22 40 ^{o ' "} .8	80 ^{''} .55
13	1 7 58 ^{h m s} .43	12 36 36 ^{o ' "} .4	113 ^{''} .37	13	2 45 9 ^{h m s} .76	20 30 44 ^{o ' "} .3	79 ^{''} .65
14	1 9 53 ^{h m s} .74	12 47 56 ^{o ' "} .6	112 ^{''} .88	14	2 47 18 ^{h m s} .27	20 38 42 ^{o ' "} .2	78 ^{''} .70
15	1 11 49 ^{h m s} .28	12 59 13 ^{o ' "} .9	112 ^{''} .40	15	2 49 27 ^{h m s} .08	20 46 34 ^{o ' "} .4	77 ^{''} .75
16	1 13 45 ^{h m s} .06	13 10 28 ^{o ' "} .3	111 ^{''} .92	16	2 51 36 ^{h m s} .19	20 54 20 ^{o ' "} .8	76 ^{''} .77
17	1 15 41 ^{h m s} .07	13 21 39 ^{o ' "} .8	111 ^{''} .42	17	2 53 45 ^{h m s} .60	21 2 1 ^{o ' "} .4	75 ^{''} .75
18	1 17 37 ^{h m s} .32	13 32 48 ^{o ' "} .3	110 ^{''} .90	18	2 55 55 ^{h m s} .30	21 9 36 ^{o ' "} .1	74 ^{''} .75
19	1 19 33 ^{h m s} .81	13 43 53 ^{o ' "} .7	110 ^{''} .40	19	2 58 5 ^{h m s} .30	21 17 4 ^{o ' "} .8	73 ^{''} .80
20	1 21 30 ^{h m s} .54	13 54 56 ^{o ' "} .1	109 ^{''} .85	20	3 0 15 ^{h m s} .60	21 24 27 ^{o ' "} .6	72 ^{''} .75
21	1 23 27 ^{h m s} .52	14 5 55 ^{o ' "} .2	109 ^{''} .32	21	3 2 26 ^{h m s} .20	21 31 44 ^{o ' "} .3	71 ^{''} .75
22	1 25 24 ^{h m s} .74	14 16 51 ^{o ' "} .1	108 ^{''} .78	22	3 4 37 ^{h m s} .09	21 38 3 ^{o ' "} .8	70 ^{''} .75
23	1 27 22 ^{h m s} .21	14 27 43 ^{o ' "} .8	108 ^{''} .22	23	3 6 48 ^{h m s} .38	21 44 52 ^{o ' "} .5	69 ^{''} .45
24	1 29 19 ^{h m s} .94	N.14 38 33 ^{o ' "} .-1		24	3 8 59 ^{h m s} .67	21 51 41 ^{o ' "} .2	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Dist. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Dist. Dec. for 10 ^m .
FRIDAY 21.				SUNDAY 23.			
0	3 8 59 ^{h m s} 74	N.21 52 57 ^{o ' " "} 3	68 ^{''} 63	0	4 59 12 ^{h m s} 35	N.25 7 7 ^{o ' " "} 9	8 ^{''} 07
1	3 11 11 ^{h m s} 51	21 59 49 ^{o ' " "} 1	67 ^{''} 57	1	5 1 35 ^{h m s} 04	25 7 56 ^{o ' " "} 3	6 ^{''} 63
2	3 13 23 ^{h m s} 57	22 6 34 ^{o ' " "} 5	66 ^{''} 52	2	5 3 57 ^{h m s} 85	25 8 36 ^{o ' " "} 1	5 ^{''} 22
3	3 15 35 ^{h m s} 91	22 13 13 ^{o ' " "} 6	65 ^{''} 43	3	5 6 20 ^{h m s} 79	25 9 7 ^{o ' " "} 4	3 ^{''} 77
4	3 17 48 ^{h m s} 55	22 19 46 ^{o ' " "} 1	64 ^{''} 33	4	5 8 43 ^{h m s} 85	25 9 30 ^{o ' " "} 0	2 ^{''} 35
5	3 20 1 ^{h m s} 47	22 26 12 ^{o ' " "} 1	63 ^{''} 22	5	5 11 7 ^{h m s} 02	25 9 44 ^{o ' " "} 1	0 ^{''} 92
6	3 22 14 ^{h m s} 68	22 32 31 ^{o ' " "} 4	62 ^{''} 12	6	5 13 30 ^{h m s} 30	25 9 49 ^{o ' " "} 6	0 ^{''} 33
7	3 24 28 ^{h m s} 17	22 38 44 ^{o ' " "} 1	61 ^{''} 00	7	5 15 53 ^{h m s} 69	25 9 46 ^{o ' " "} 4	1 ^{''} 98
8	3 26 41 ^{h m s} 94	22 44 50 ^{o ' " "} 1	59 ^{''} 88	8	5 18 17 ^{h m s} 17	25 9 34 ^{o ' " "} 3	3 ^{''} 42
9	3 28 55 ^{h m s} 99	22 50 49 ^{o ' " "} 4	58 ^{''} 72	9	5 20 40 ^{h m s} 74	25 9 14 ^{o ' " "} 0	4 ^{''} 28
10	3 31 10 ^{h m s} 33	22 56 41 ^{o ' " "} 7	57 ^{''} 58	10	5 23 4 ^{h m s} 41	25 8 44 ^{o ' " "} 7	6 ^{''} 32
11	3 33 24 ^{h m s} 93	23 2 27 ^{o ' " "} 2	56 ^{''} 43	11	5 25 28 ^{h m s} 16	25 8 6 ^{o ' " "} 8	7 ^{''} 78
12	3 35 39 ^{h m s} 81	23 8 5 ^{o ' " "} 8	55 ^{''} 27	12	5 27 51 ^{h m s} 98	25 7 20 ^{o ' " "} 1	9 ^{''} 23
13	3 37 54 ^{h m s} 96	23 13 37 ^{o ' " "} 4	54 ^{''} 08	13	5 30 15 ^{h m s} 88	25 6 24 ^{o ' " "} 7	10 ^{''} 70
14	3 40 10 ^{h m s} 38	23 19 1 ^{o ' " "} 9	52 ^{''} 90	14	5 32 39 ^{h m s} 85	25 5 20 ^{o ' " "} 3	12 ^{''} 15
15	3 42 26 ^{h m s} 07	23 24 19 ^{o ' " "} 3	51 ^{''} 70	15	5 35 3 ^{h m s} 88	25 4 7 ^{o ' " "} 6	13 ^{''} 60
16	3 44 42 ^{h m s} 02	23 29 29 ^{o ' " "} 5	50 ^{''} 50	16	5 37 27 ^{h m s} 97	25 2 46 ^{o ' " "} 0	15 ^{''} 08
17	3 46 58 ^{h m s} 24	23 34 32 ^{o ' " "} 5	49 ^{''} 28	17	5 39 52 ^{h m s} 11	25 1 15 ^{o ' " "} 5	16 ^{''} 53
18	3 49 14 ^{h m s} 71	23 39 28 ^{o ' " "} 2	48 ^{''} 07	18	5 42 16 ^{h m s} 30	24 59 36 ^{o ' " "} 3	18 ^{''} 00
19	3 51 31 ^{h m s} 44	23 44 16 ^{o ' " "} 6	46 ^{''} 83	19	5 44 40 ^{h m s} 52	24 57 48 ^{o ' " "} 3	19 ^{''} 47
20	3 53 48 ^{h m s} 42	23 48 57 ^{o ' " "} 6	45 ^{''} 60	20	5 47 4 ^{h m s} 78	24 55 51 ^{o ' " "} 5	20 ^{''} 92
21	3 56 5 ^{h m s} 66	23 53 31 ^{o ' " "} 2	44 ^{''} 37	21	5 49 29 ^{h m s} 08	24 53 46 ^{o ' " "} 0	22 ^{''} 40
22	3 58 23 ^{h m s} 14	23 57 57 ^{o ' " "} 4	43 ^{''} 10	22	5 51 53 ^{h m s} 39	24 51 31 ^{o ' " "} 6	23 ^{''} 55
23	4 0 40 ^{h m s} 86	N.24 2 16 ^{o ' " "} 0	41 ^{''} 43	23	5 54 17 ^{h m s} 73	N.24 49 8 ^{o ' " "} 5	25 ^{''} 32
SATURDAY 22.				MONDAY 24.			
0	4 2 58 ^{h m s} 83	N.24 6 27 ^{o ' " "} 0	40 ^{''} 57	0	5 56 42 ^{h m s} 07	N.24 46 36 ^{o ' " "} 6	26 ^{''} 78
1	4 5 17 ^{h m s} 04	24 10 30 ^{o ' " "} 4	39 ^{''} 28	1	5 59 6 ^{h m s} 43	24 43 55 ^{o ' " "} 9	28 ^{''} 25
2	4 7 35 ^{h m s} 47	24 14 26 ^{o ' " "} 1	38 ^{''} 00	2	6 1 30 ^{h m s} 79	24 41 6 ^{o ' " "} 4	29 ^{''} 70
3	4 9 54 ^{h m s} 14	24 18 14 ^{o ' " "} 1	36 ^{''} 70	3	6 3 55 ^{h m s} 15	24 38 8 ^{o ' " "} 2	31 ^{''} 17
4	4 12 13 ^{h m s} 04	24 21 54 ^{o ' " "} 3	35 ^{''} 40	4	6 6 19 ^{h m s} 50	24 35 1 ^{o ' " "} 2	32 ^{''} 62
5	4 14 32 ^{h m s} 16	24 25 26 ^{o ' " "} 7	34 ^{''} 10	5	6 8 43 ^{h m s} 85	24 31 45 ^{o ' " "} 5	34 ^{''} 10
6	4 16 51 ^{h m s} 50	24 28 51 ^{o ' " "} 3	32 ^{''} 78	6	6 11 8 ^{h m s} 18	24 28 20 ^{o ' " "} 9	35 ^{''} 53
7	4 19 11 ^{h m s} 05	24 32 8 ^{o ' " "} 0	31 ^{''} 47	7	6 13 32 ^{h m s} 48	24 24 47 ^{o ' " "} 7	37 ^{''} 00
8	4 21 30 ^{h m s} 82	24 35 16 ^{o ' " "} 8	30 ^{''} 13	8	6 15 56 ^{h m s} 77	24 21 5 ^{o ' " "} 7	38 ^{''} 45
9	4 23 50 ^{h m s} 79	24 38 17 ^{o ' " "} 6	28 ^{''} 78	9	6 18 21 ^{h m s} 02	24 17 15 ^{o ' " "} 0	39 ^{''} 90
10	4 26 10 ^{h m s} 97	24 41 10 ^{o ' " "} 3	27 ^{''} 47	10	6 20 45 ^{h m s} 24	24 13 13 ^{o ' " "} 6	41 ^{''} 35
11	4 28 31 ^{h m s} 35	24 43 55 ^{o ' " "} 1	26 ^{''} 10	11	6 23 9 ^{h m s} 42	24 9 7 ^{o ' " "} 5	42 ^{''} 80
12	4 30 51 ^{h m s} 92	24 46 31 ^{o ' " "} 7	24 ^{''} 75	12	6 25 33 ^{h m s} 53	24 4 50 ^{o ' " "} 7	44 ^{''} 23
13	4 33 12 ^{h m s} 68	24 49 0 ^{o ' " "} 2	23 ^{''} 40	13	6 27 57 ^{h m s} 64	24 0 25 ^{o ' " "} 3	45 ^{''} 68
14	4 35 33 ^{h m s} 63	24 51 20 ^{o ' " "} 6	22 ^{''} 03	14	6 30 21 ^{h m s} 68	23 55 51 ^{o ' " "} 2	47 ^{''} 13
15	4 37 54 ^{h m s} 76	24 53 32 ^{o ' " "} 8	20 ^{''} 67	15	6 32 45 ^{h m s} 66	23 51 8 ^{o ' " "} 4	48 ^{''} 55
16	4 40 16 ^{h m s} 07	24 55 36 ^{o ' " "} 8	19 ^{''} 27	16	6 35 9 ^{h m s} 57	23 46 17 ^{o ' " "} 1	49 ^{''} 98
17	4 42 37 ^{h m s} 55	24 57 32 ^{o ' " "} 4	17 ^{''} 90	17	6 37 33 ^{h m s} 43	23 41 17 ^{o ' " "} 2	51 ^{''} 40
18	4 44 59 ^{h m s} 20	24 59 19 ^{o ' " "} 8	16 ^{''} 50	18	6 39 57 ^{h m s} 21	23 36 8 ^{o ' " "} 8	52 ^{''} 33
19	4 47 21 ^{h m s} 01	25 0 58 ^{o ' " "} 8	15 ^{''} 12	19	6 42 20 ^{h m s} 92	23 30 51 ^{o ' " "} 8	54 ^{''} 27
20	4 49 42 ^{h m s} 98	25 2 29 ^{o ' " "} 5	13 ^{''} 72	20	6 44 44 ^{h m s} 56	23 25 26 ^{o ' " "} 2	55 ^{''} 67
21	4 52 3 ^{h m s} 10	25 3 51 ^{o ' " "} 8	12 ^{''} 30	21	6 47 8 ^{h m s} 11	23 19 52 ^{o ' " "} 2	57 ^{''} 07
22	4 54 27 ^{h m s} 38	25 5 5 ^{o ' " "} 6	10 ^{''} 90	22	6 49 31 ^{h m s} 58	23 14 9 ^{o ' " "} 8	58 ^{''} 48
		25 6 11 ^{o ' " "} 0	9 ^{''} 48	23	6 51 54 ^{h m s} 96	23 8 18 ^{o ' " "} 9	59 ^{''} 48
		N.25 7 7 ^{o ' " "} 9		24	6 54 18 ^{h m s} 24	N.23 2 19 ^{o ' " "} 6	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

h.	m.	s.	Right Ascension.	Declination.	Diff. Dec. for 10".	Hour.	h.	m.	s.	Right Ascension.	Declination.	Diff. for 10".
TUESDAY 25.						THURSDAY 27.						
6	54	18	24	N.23 2 19	61.28	0	8	46	20	88	N.15 43 39	119
6	56	41	43	22 56 11	62.67	1	8	48	37	23	15 31 43	120
6	59	4	52	22 49 55	64.06	2	8	50	58	49	15 19 40	121
7	1	27	50	22 43 31	65.43	3	8	53	9	60	15 7 32	122
7	3	50	38	22 36 59	66.82	4	8	55	25	57	14 55 18	123
7	6	13	15	22 30 18	68.17	5	8	57	41	40	14 42 59	124
7	8	35	81	22 23 29	69.53	6	8	59	57	09	14 30 34	125
7	10	58	35	22 16 31	70.90	7	9	2	12	65	14 18 3	126
7	13	20	77	22 9 26	72.23	8	9	4	28	07	14 5 28	126
7	15	43	07	22 2 13	73.58	9	9	6	43	36	13 52 46	127
7	18	5	25	21 54 51	74.92	10	9	8	58	51	13 40 0	128
7	20	27	31	21 47 22	76.23	11	9	11	13	54	13 27 8	129
7	22	49	23	21 39 44	77.57	12	9	13	28	43	13 14 11	130
7	25	11	02	21 31 59	78.87	13	9	15	43	21	13 1 9	131
7	27	32	68	21 24 6	80.18	14	9	17	57	86	12 48 19	132
7	29	54	21	21 16 5	81.48	15	9	20	12	39	12 34 49	133
7	32	15	60	21 7 56	82.78	16	9	22	26	81	12 21 33	134
7	34	36	85	20 59 39	84.06	17	9	24	41	12	12 8 11	134
7	36	57	96	20 51 15	85.33	18	9	26	55	31	11 54 45	135
7	39	18	92	20 42 43	86.62	19	9	29	9	39	11 41 14	135
7	41	39	74	20 34 3	87.87	20	9	31	23	36	11 27 38	136
7	44	0	42	20 25 16	89.12	21	9	33	37	23	11 13 58	137
7	46	20	95	20 16 21	90.37	22	9	35	51	00	11 0 18	138
7	48	41	33	N.20 7 19	91.60	23	9	38	4	67	N.10 46 25	138
WEDNESDAY 26.						FRIDAY 28.						
7	51	1	55	N.19 58 9	92.83	0	9	40	18	25	N.10 32 39	139
7	53	21	63	19 48 52	94.05	1	9	42	31	73	10 18 34	140
7	55	41	55	19 39 28	95.27	2	9	44	45	13	10 4 33	140
7	58	1	33	19 29 56	96.45	3	9	46	58	44	9 50 28	141
8	0	20	95	19 20 18	97.65	4	9	49	11	66	9 36 19	142
8	2	40	41	19 10 32	98.85	5	9	51	24	81	9 22 6	142
8	4	59	72	19 0 39	100.00	6	9	53	37	88	9 7 49	143
8	7	18	88	18 50 39	101.17	7	9	55	50	87	8 53 28	144
8	9	37	88	18 40 32	102.33	8	9	58	3	80	8 39 46	144
8	11	56	72	18 30 18	103.47	9	10	0	16	66	8 24 36	145
8	14	15	41	18 19 57	104.60	10	10	2	29	46	8 10 5	145
8	16	33	94	18 9 29	105.73	11	10	4	42	19	7 55 31	146
8	18	52	31	17 58 55	106.83	12	10	6	54	87	7 40 58	146
8	21	10	53	17 48 14	107.95	13	10	9	7	50	7 26 12	147
8	23	28	60	17 37 26	109.03	14	10	11	20	08	7 11 28	147
8	25	46	51	17 26 32	110.12	15	10	13	32	61	6 56 41	148
8	28	4	26	17 15 31	111.20	16	10	15	45	10	6 41 51	148
8	30	21	87	17 4 24	112.25	17	10	17	57	56	6 26 58	149
8	32	39	32	16 53 11	113.32	18	10	20	9	97	6 12 3	149
8	34	56	61	16 41 51	114.35	19	10	22	22	36	5 57 49	150
8	37	13	75	16 30 25	115.38	20	10	24	34	73	5 43 49	150
8	39	30	75	16 18 52	116.40	21	10	26	47	07	5 27	150
8	41	47	59	16 7 14	117.40	22	10	28	59	39	5	150
8	44	4	28	15 55 29	118.42	23	10	31	11	70		
8	46	20	83	N.15 43 39		24	10	33	23	90		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
SATURDAY 29.				MONDAY 31.			
0	^h 10 ^m 33 ^s 23·99	N. 4 41 36·3	152·10	0	^h 12 ^m 20 ^s 19·30	S. 7 39 49·7	150·42
1	10 35 36·28	4 26 23·7	152·43	1	12 22 35·90	7 54 52·3	149·98
2	10 37 48·57	4 11 9·1	152·77	2	12 24 52·68	8 9 52·2	149·50
3	10 40 0·86	3 55 52·5	153·08	3	12 27 9·64	8 24 49·2	149·03
4	10 42 13·15	3 40 34·0	153·38	4	12 29 26·79	8 39 43·4	148·52
5	10 44 25·45	3 25 13·7	153·67	5	12 31 44·13	8 54 34·5	147·99
6	10 46 37·76	3 9 51·7	153·93	6	12 34 1·66	9 9 29·4	147·48
7	10 48 50·09	2 54 28·1	154·18	7	12 36 19·38	9 24 7·1	146·98
8	10 51 2·44	2 39 3·0	154·42	8	12 38 37·30	9 38 48·4	146·32
9	10 53 14·82	2 23 36·5	154·62	9	12 40 55·41	9 53 26·3	145·72
10	10 55 27·22	2 8 8·7	154·85	10	12 43 13·73	10 8 0·6	145·10
11	10 57 39·65	1 52 39·6	155·03	11	12 45 32·26	10 22 31·2	144·48
12	10 59 52·12	1 37 9·4	155·20	12	12 47 50·98	10 36 58·1	143·83
13	11 2 4·63	1 21 38·2	155·37	13	12 50 9·91	10 51 21·1	143·17
14	11 4 17·18	1 6 6·0	155·52	14	12 52 29·06	11 5 40·1	142·47
15	11 6 29·79	0 50 32·9	155·62	15	12 54 48·41	11 19 54·9	141·78
16	11 8 42·44	0 34 59·2	155·75	16	12 57 7·98	11 34 5·6	141·07
17	11 10 55·16	0 19 24·7	155·83	17	12 59 27·77	11 48 12·0	140·32
18	11 13 7·93	N. 0 3 49·7	155·92	18	13 1 47·77	12 2 13·9	139·57
19	11 15 20·77	S. 0 11 45·8	155·97	19	13 4 8·00	12 16 11·3	138·80
20	11 17 33·68	0 27 21·6	156·03	20	13 6 28·45	12 30 4·1	138·00
21	11 19 46·67	0 42 57·8	156·05	21	13 8 49·12	12 43 59·1	137·20
22	11 21 59·73	0 58 34·1	156·05	22	13 11 10·02	12 57 35·3	136·27
23	11 24 12·87	S. 1 14 10·4	156·07	23	13 13 31·14	S. 13 11 13·5	135·28
SUNDAY 30.				TUESDAY, NOV. 1.			
0	11 26 26·10	S. 1 29 46·8	156·05	0	13 15 52·50	S. 13 24 46·7	
1	11 28 39·42	1 45 28·1	156·00				
2	11 30 52·84	2 0 59·1	155·95				
3	11 33 6·35	2 16 34·8	155·88				
4	11 35 19·96	2 32 10·1	155·78				
5	11 37 33·69	2 47 44·8	155·79				
6	11 39 47·52	3 3 19·0	155·67				
7	11 42 1·46	3 18 52·4	155·43				
8	11 44 15·52	3 34 25·0	155·28				
9	11 46 29·70	3 49 56·7	155·10				
10	11 48 44·00	4 5 27·3	154·92				
11	11 50 58·43	4 20 56·8	154·72				
12	11 53 12·99	4 36 25·1	154·48				
13	11 55 27·69	4 51 52·0	154·25				
14	11 57 42·52	5 7 17·5	154·00				
15	11 59 57·50	5 22 41·5	153·72				
16	12 2 12·62	5 38 3·8	153·42				
17	12 4 27·89	5 53 24·3	153·10				
18	12 6 43·32	6 8 42·9	152·78				
19	12 8 58·91	6 23 59·6	152·43				
20	12 11 14·65	6 39 14·2	152·07				
21	12 13 30·54	6 54 26·6	151·70				
22	12 15 46·57	7 9 36·8	151·28				
23	12 18 2·74	7 24 44·5	150·87				

PHASES OF THE MOON.

- New Moon - - ^d 3 ^h 18 ^m 23·8
- ☽ First Quarter - 10 18 40·6
- Full Moon - - 18 23 12·4
- ☾ Last Quarter - 26 12 40·6

- ☾ Perigee - - - - - ^d 2 ^h 22
- ☾ Apogee - - - - - 15 6
- ☾ Perigee - - - - - 31 4

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.			P.L. of diff.			III ^h .			P.L. of diff.			VI ^h .			P.L. of diff.			IX ^h .			P.L. of diff.		
		°	'	"				°	'	"				°	'	"				°	'	"			
1	Aldebaran W.	80	54	35	2123	82	44	59	2118	84	35	39	2103	86	26	34	2094	88	17	27	2085	89	8	18	2076
	Pollux W.	38	58	7	2151	40	47	48	2136	42	37	52	2122	44	28	18	2109	46	19	7	2094	47	10	18	2085
	SUN E.	39	13	38	2413	37	30	22	2407	35	46	57	2401	34	3	23	2395	32	14	8	2386	30	25	17	2377
6	SUN W.	31	17	37	2585	32	56	52	2599	34	35	48	2613	36	14	25	2627	37	3	14	2636	38	12	25	2645
	Saturn E.	54	37	51	2231	52	50	9	2247	51	2	51	2264	49	15	39	2281	47	8	29	2298	45	21	48	2315
	Jupiter E.	60	14	46	2243	58	27	22	2260	56	40	23	2277	54	53	49	2294	52	46	38	2311	50	54	28	2328
	α Aquilæ E.	79	51	18	2783	78	16	28	2808	76	42	10	2832	75	8	24	2859	73	19	13	2886	71	30	22	2913
7	SUN W.	44	22	17	2711	45	58	43	2729	47	34	44	2747	49	10	21	2764	51	1	10	2781	53	11	17	2798
	Saturn E.	40	28	3	2372	38	43	48	2390	36	59	59	2409	35	16	37	2428	33	32	26	2447	31	53	15	2466
	Jupiter E.	46	7	27	2384	44	23	29	2403	42	39	59	2422	40	56	55	2441	38	43	44	2460	36	50	33	2479
	α Aquilæ E.	67	28	49	3017	65	58	57	3053	64	29	50	3091	63	1	29	3128	61	10	18	3165	59	19	27	3202
	Fomalhaut E.	92	0	17	2772	90	25	13	2791	88	50	33	2809	87	16	17	2828	85	25	10	2847	83	34	7	2866
8	SUN W.	57	2	11	2863	58	35	17	2882	60	7	59	2902	61	40	15	2921	62	19	4	2940	63	8	15	2959
	Jupiter E.	32	28	19	2536	30	47	56	2556	29	8	0	2574	27	28	29	2593	25	37	18	2612	23	46	7	2631
	α Aquilæ E.	55	52	50	3869	54	29	58	3425	53	8	10	3484	51	47	28	3543	49	56	17	3602	47	65	6	3661
	Fomalhaut E.	79	31	46	2940	78	0	18	2965	76	29	21	2990	74	58	56	3019	72	67	45	3038	70	76	34	3057
	α Pegasi E.	99	55	25	2658	98	17	49	2676	96	40	37	2693	95	3	48	2711	93	12	57	2730	91	21	66	2749
9	SUN W.	69	15	29	3018	70	45	20	3036	72	14	48	3055	73	43	53	3073	74	32	2	3092	75	20	11	3111
	Venus W.	22	35	34	2992	24	5	57	3012	25	35	55	3030	27	5	31	3048	29	14	40	3066	31	23	29	3084
	Antares W.	17	38	40	2667	19	16	4	2683	20	53	7	2698	22	29	50	2714	24	38	39	2730	26	47	48	2746
	Fomalhaut E.	67	35	1	3184	66	7	57	3186	64	41	31	3216	63	15	41	3245	61	24	50	3274	59	33	59	3303
	α Pegasi E.	87	5	42	2802	85	31	16	2820	83	57	14	2838	82	23	35	2856	80	32	44	2874	78	41	53	2892
10	SUN W.	81	3	51	3161	82	30	47	3176	83	57	25	3192	85	23	44	3209	86	11	32	3225	87	0	41	3241
	Venus W.	34	28	3	3184	35	55	32	3151	37	22	40	3166	38	49	30	3181	39	38	19	3196	40	27	8	3211
	Antares W.	30	28	6	2792	32	2	45	2807	33	37	4	2821	35	11	5	2835	36	0	14	2849	37	3	23	2863
	Fomalhaut E.	56	16	27	3429	54	54	43	3470	53	33	45	3512	52	13	34	3557	50	22	43	3602	48	31	52	3647
	α Pegasi E.	74	41	13	2946	73	9	53	2965	71	38	56	2981	70	8	20	3000	68	17	29	3019	66	26	38	3038
11	SUN W.	92	30	46	3281	93	55	20	3294	95	19	39	3307	96	43	43	3319	97	17	52	3331	98	6	61	3343
	Venus W.	45	59	15	3252	47	24	23	3266	48	49	16	3277	50	13	54	3289	51	2	63	3300	52	11	71	3311
	Antares W.	42	56	43	2901	44	29	1	2913	46	1	3	2924	47	32	52	2935	48	21	61	2946	49	10	69	2957
	Fomalhaut E.	45	45	45	3823	44	31	7	3837	43	17	34	3856	42	5	11	4001	40	14	20	4012	39	3	28	4023
	α Pegasi E.	62	40	56	3088	61	12	32	3106	59	44	30	3124	58	16	50	3143	56	25	39	3161	54	34	48	3179
α Arietis E.	104	53	55	2918	103	21	59	2929	101	50	17	2941	100	18	50	2951	98	27	59	2961	96	36	68	2971	
12	SUN W.	103	40	38	3374	105	3	24	3383	106	26	0	3393	107	48	25	3402	108	36	14	3411	109	24	22	3419
	Venus W.	57	13	49	3341	58	37	13	3350	60	0	27	3359	61	23	30	3366	62	11	37	3374	63	0	44	3381
	Antares W.	55	8	32	2985	56	39	4	2993	58	9	25	3002	59	39	36	3009	60	29	44	3016	61	19	51	3022
	α Pegasi E.	51	4	1	3237	49	38	36	3257	48	13	34	3278	46	48	57	3290	44	57	66	3302	42	66	75	3314
	α Arietis E.	92	44	50	3001	91	14	38	3010	89	44	37	3018	88	14	46	3026	86	23	55	3034	84	32	64	3042
13	SUN W.	114	38	8	3439	115	59	40	3445	117	21	6	3450	118	42	26	3454	119	11	34	3457	120	0	42	3459
	Venus W.	68	16	40	3401	69	38	56	3406	71	1	6	3411	72	23	10	3415	73	12	19	3418	74	2	28	3420
	Antares W.	67	8	18	3042	68	37	39	3047	70	6	54	3051	71	36	4	3054	72	25	13	3057	73	14	21	3059
	Saturn W.	35	50	28	3061	37	19	26	3065	38	48	19	3068	39	37	8	3071	40	26	17	3073	41	15	6	3075
	Jupiter W.	29	51	48	3078	31	20	25	3083	32	48	55	3086	33	37	44	3088	34	26	33	3090	35	15	22	3091
	α Pegasi E.	39	52	39	3429	38	30	55	3461	37	9	47	3470	35	0	36	3478	33	48	45	3486	31	57	54	3494
α Arietis E.	80	47	47	3058	79	18	46	3065	77	49	3	3072	75	38	12	3079	73	27	21	3086	71	16	10	3093	

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.			P.L. of diff.	III ^h .			P.L. of diff.	VI ^h .			P.L. of diff.	IX ^h .			P.L. of diff.	
		°	'	"		°	'	"		°	'	"		°	'	"		
14	Sun	W.	125	27	41	3477	126	48	31	3480	129	9	18	3483	129	30	1	3485
	Venus	W.	79	12	29	3480	80	34	12	3432	81	55	52	3433	83	17	31	3435
	Saturn	W.	47	39	49	3090	49	8	11	3092	50	36	31	3094	52	4	48	3095
	Jupiter	W.	41	38	8	3109	43	6	7	3111	44	34	3	3113	46	1	57	3115
	α Arietis	E.	68	58	22	3091	67	30	1	3093	66	1	43	3096	64	33	28	3097
	Aldebaran	E.	101	35	2	3120	100	7	17	3122	98	39	34	3124	97	11	53	3125
15	Venus	W.	90	5	36	3483	91	27	15	3483	92	48	55	3481	94	10	36	3485
	Saturn	W.	59	26	1	3096	60	54	16	3096	62	22	31	3094	63	50	48	3095
	Jupiter	W.	53	21	10	3116	54	49	0	3115	56	16	52	3114	57	44	44	3113
	α Aquilæ	W.	44	24	18	4337	45	30	37	4276	46	37	52	4219	47	46	0	4161
	α Arietis	E.	57	12	38	3102	55	44	31	3102	54	16	24	3102	52	48	17	3101
	Aldebaran	E.	89	53	37	3124	88	25	57	3124	86	58	16	3123	85	30	34	3122
16	Venus	W.	100	59	43	3415	102	21	43	3411	103	43	47	3408	105	5	55	3408
	Saturn	W.	71	12	44	3082	72	41	16	3078	74	9	52	3076	75	38	31	3075
	Jupiter	W.	65	4	36	3102	66	32	43	3099	68	0	54	3096	69	29	8	3095
	α Aquilæ	W.	53	38	34	3946	54	51	7	3911	56	4	16	3879	57	17	58	3845
	α Arietis	E.	45	27	33	3098	43	59	21	3097	42	31	8	3096	41	2	54	3095
	Aldebaran	E.	78	11	38	3112	76	43	43	3110	75	15	45	3107	73	47	44	3105
17	Saturn	W.	83	2	58	3052	84	32	7	3047	86	1	22	3042	87	30	43	3037
	Jupiter	W.	76	51	28	3073	78	20	11	3067	79	49	1	3063	81	17	56	3060
	α Aquilæ	W.	63	33	45	3719	64	50	12	3698	66	7	1	3677	67	24	13	3664
	Fomalhaut	W.	39	24	12	4223	40	32	16	4146	41	41	33	4078	42	51	56	4015
	α Arietis	E.	33	41	30	3093	32	13	12	3094	30	44	55	3095	29	16	40	3097
	Aldebaran	E.	66	26	47	3090	64	58	25	3086	63	29	58	3083	62	1	27	3079
Pollux	E.	108	22	46	3068	106	53	57	3068	105	25	2	3057	103	56	0	3053	
18	Saturn	W.	94	59	5	3010	96	29	6	3004	97	59	14	2998	99	29	30	2991
	Jupiter	W.	88	44	8	3021	90	13	43	3025	91	43	25	3019	93	13	14	3013
	α Aquilæ	W.	73	55	2	3875	75	14	4	3861	76	33	21	3847	77	52	53	3838
	Fomalhaut	W.	48	58	1	3766	50	13	39	3727	51	29	58	3690	52	46	56	3664
	α Pegasi	W.	26	19	3	3824	27	33	40	3738	28	49	47	3662	30	7	14	3594
	Aldebaran	E.	54	37	50	3062	53	8	54	3060	51	39	55	3057	50	10	53	3064
Pollux	E.	96	29	5	3023	94	59	21	3017	93	29	29	3010	91	59	29	3004	
19	Jupiter	W.	100	44	19	2980	102	14	57	2974	103	45	42	2967	105	16	36	2960
	α Aquilæ	W.	84	33	49	3480	85	54	35	3471	87	15	31	3463	88	36	36	3464
	Fomalhaut	W.	59	20	14	3514	60	40	23	3489	62	0	59	3468	63	21	59	3447
	α Pegasi	W.	36	50	8	3359	38	13	11	3326	39	36	53	3294	41	1	12	3266
	Aldebaran	E.	42	45	1	3047	41	15	46	3047	39	46	31	3047	38	17	16	3045
	Pollux	E.	84	27	33	2972	82	56	45	2966	81	25	50	2959	79	54	46	2953
20	α Aquilæ	W.	95	23	57	3426	96	45	44	3422	98	7	35	3418	99	29	31	3411
	Fomalhaut	W.	70	12	37	3355	71	35	45	3339	72	59	11	3325	74	22	54	3312
	α Pegasi	W.	48	10	34	3148	49	37	46	3128	51	5	22	3109	52	33	21	3092
	Pollux	E.	72	17	23	2930	70	45	29	2913	69	13	27	2907	67	41	1	2895
	Regulus	E.	109	9	40	2892	107	37	11	2884	106	4	33	2878	104			
21	Fomalhaut	W.	81	25	25	3248	82	50	37	3237	84	16	2	3227				
	α Pegasi	W.	59	58	12	3016	61	28	5	3002	62	58	16	2989				

MEAN TIME.

LUNAR DISTANCES.

the Month.	Star's Name and Position.	Midnight.	P.L. of diff.	XV ^b .	P.L. of diff.	XVIII ^b .	P.L. of diff.	XXI ^b .	P.L. of diff.
14	Sun W.	130 50 42	3488	132 11 20	3489	133 31 57	3491	134 52 31	3492
	Venus W.	84 39 8	3425	86 0 45	3425	87 22 22	3425	88 43 59	3425
	Saturn W.	53 33 4	3096	55 1 19	3096	56 29 38	3096	57 57 47	3096
	Jupiter W.	47 29 49	3115	48 57 40	3115	50 25 31	3117	51 53 20	3116
	α Arietis E.	63 5 15	3099	61 37 4	3100	60 8 54	3101	58 40 46	3101
15	Aldebaran E.	95 44 13	3125	94 16 34	3125	92 48 55	3125	91 21 16	3125
	Venus W.	95 32 20	3427	96 54 6	3424	98 15 55	3422	99 37 47	3418
	Saturn W.	65 19 7	3091	66 47 27	3089	68 15 50	3087	69 44 15	3084
	Jupiter W.	59 12 38	3112	60 40 33	3109	62 8 32	3108	63 36 32	3105
	α Aquilæ W.	48 55 1	4114	50 4 49	4068	51 15 22	4024	52 26 38	3993
16	α Arietis E.	51 20 9	3101	49 52 1	3101	48 23 53	3100	46 55 43	3100
	Aldebaran E.	84 2 51	3120	82 35 6	3119	81 7 19	3117	79 39 30	3115
	Venus W.	106 28 8	3399	107 50 26	3394	109 12 49	3390	110 35 17	3385
	Saturn W.	77 7 13	3069	78 36 3	3064	80 4 57	3060	81 33 55	3056
	Jupiter W.	70 57 27	3089	72 25 50	3086	73 54 17	3081	75 22 50	3077
17	α Aquilæ W.	58 32 11	3819	59 46 54	3791	61 2 5	3766	62 17 42	3742
	α Arietis E.	39 34 39	3095	38 6 23	3093	36 38 5	3094	35 9 48	3093
	Aldebaran E.	72 19 40	3102	70 51 33	3098	69 23 21	3096	67 55 6	3092
	Saturn W.	89 0 10	3031	90 29 44	3026	91 59 24	3021	93 29 11	3015
	Jupiter W.	82 46 57	3052	84 16 5	3047	85 45 19	3042	87 14 40	3036
18	α Aquilæ W.	68 41 45	3639	69 59 37	3622	71 17 48	3606	72 36 16	3589
	Fomalhaut W.	44 3 21	3956	45 15 44	3902	46 29 1	3854	47 43 7	3808
	α Arietis E.	27 48 27	3101	26 20 19	3105	24 52 16	3112	23 24 22	3121
	Aldebaran E.	60 32 52	3075	59 4 12	3073	57 35 29	3069	56 6 41	3066
	Pollux E.	102 26 51	3046	100 57 35	3040	99 28 12	3035	97 58 42	3029
19	Saturn W.	100 59 54	2985	102 30 25	2978	104 1 5	2973	105 31 52	2966
	Jupiter W.	94 43 11	3006	96 13 16	3000	97 43 29	2993	99 13 50	2987
	α Aquilæ W.	79 12 39	3823	80 32 38	3811	81 52 50	3800	83 13 14	3790
	Fomalhaut W.	54 4 30	3623	55 22 39	3594	56 41 20	3565	58 0 33	3539
	α Pegasi W.	31 25 53	3537	32 45 36	3486	34 6 16	3439	35 27 48	3397
20	Aldebaran E.	48 41 47	3082	47 12 39	3080	45 48 28	3048	44 14 15	3047
	Pollux E.	90 29 21	2998	88 59 6	2992	87 28 43	2985	85 58 12	2979
	Jupiter W.	106 47 39	2953	108 18 51	2946	109 50 11	2939	111 21 41	2931
	α Aquilæ W.	89 57 49	3448	91 19 11	3442	92 40 40	3436	94 2 16	3431
	Fomalhaut W.	64 43 23	3426	66 5 10	3407	67 27 19	3389	68 49 48	3372
21	α Pegasi W.	42 26 5	3237	43 51 30	3213	45 17 24	3189	46 43 46	3167
	Aldebaran E.	36 48 4	3082	35 18 56	3056	33 49 52	3061	32 20 55	3069
	Pollux E.	78 23 34	2946	76 32 14	2939	75 20 45	2932	73 49 8	2927
	α Aquilæ W.	100 51 28	3415	102 13 28	3414	103 35 29	3414	104 57 31	3415
	Fomalhaut W.	75 46 54	3297	77 11 9	3283	78 35 40	3271	80 0 25	3259
22	α Pegasi W.	54 1 40	3078	55 30 20	3060	56 59 19	3048	58 28 36	3030
	Pollux E.	66 8 58	2894	64 36 31	2887	63 3 55	2880	61 31 11	2875
	α Arietis E.	102 58 48	2863	101 25 41	2855	99 52 24	2847	98 18 57	2838
	α Arietis E.	88 33 27	3199	88 33 27	3199	89 59 37	3192	91 25 56	3183
	α Arietis E.	85 28 63	2863	67 30 24	2852	69 1 37	2939	70 33 6	2927

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.		Noon.			III ^h .			VI ^h .			IX ^h .			P.L. of diff.			
		°	'	"	°	'	"	°	'	"	°	'	"				
Pollux	E.	59	58	20	2868	58	25	20	2861	56	52	11	2956	55	18	56	2940
Regulus	E.	96	45	19	2832	95	11	32	2823	93	37	34	2815	92	3	26	2808
Mars	E.	118	0	20	3070	116	31	34	3061	115	2	37	3052	113	33	28	3045
α Pegasi	W.	72	4	50	2917	73	36	47	2905	75	9	0	2895	76	41	25	2888
α Arietis	W.	28	33	52	2833	30	7	41	2818	31	41	46	2804	33	16	9	2797
Pollux	E.	47	30	42	2822	45	56	43	2817	44	22	37	2812	42	48	23	2805
Regulus	E.	84	10	7	2766	82	34	55	2757	80	59	31	2750	79	23	57	2743
Mars	E.	106	4	59	2998	104	34	43	2989	103	4	16	2979	101	33	37	2972
α Pegasi	W.	84	26	58	2832	86	0	44	2823	87	34	42	2812	89	8	54	2805
α Arietis	W.	41	12	29	2726	42	48	34	2715	44	24	54	2704	46	1	29	2697
Pollux	E.	34	56	21	2798	33	21	50	2798	31	47	20	2801	30	12	53	2794
Regulus	E.	71	23	12	2697	69	46	28	2689	68	9	33	2678	66	32	24	2671
Mars	E.	93	57	25	2928	92	25	35	2913	90	53	32	2903	89	21	17	2893
SUN	E.	133	22	47	3065	131	53	55	3053	130	24	48	3042	128	55	27	3031
α Arietis	W.	54	8	14	2636	55	46	20	2624	57	24	42	2614	59	3	18	2604
Aldebaran	W.	22	39	57	2930	24	11	38	2882	25	44	20	2840	27	17	56	2800
Regulus	E.	58	23	35	2623	56	45	11	2613	55	6	34	2604	53	27	45	2594
Mars	E.	81	36	49	2842	80	3	16	2832	78	29	30	2821	76	55	30	2811
SUN	E.	121	25	12	2974	119	54	26	2962	118	23	25	2950	116	52	10	2939
α Arietis	W.	67	20	11	2846	69	0	20	2838	70	40	45	2828	72	21	26	2818
Aldebaran	W.	35	16	31	2666	36	53	57	2644	38	31	52	2624	40	10	14	2604
Regulus	E.	45	10	17	2846	43	30	8	2836	41	49	45	2827	40	9	10	2817
Mars	E.	69	2	7	2788	67	26	44	2747	65	51	7	2738	64	15	17	2728
SUN	E.	109	12	11	2879	107	39	25	2867	106	6	24	2855	104	33	7	2843
α Arietis	W.	80	48	50	2454	82	31	8	2443	84	13	42	2431	85	56	32	2411
Aldebaran	W.	48	28	18	2520	50	9	4	2505	51	50	11	2490	53	31	39	2474
Regulus	E.	31	43	2	2475	30	1	13	2468	28	19	15	2461	26	37	7	2446
Mars	E.	56	12	28	2673	54	35	12	2663	52	57	42	2652	51	19	57	2643
SUN	E.	96	42	46	2781	95	7	53	2769	93	32	45	2756	91	57	19	2744
Aldebaran	W.	62	4	7	2405	63	47	35	2391	65	31	22	2379	67	15	27	2364
Pollux	W.	20	39	4	2618	22	17	34	2569	23	57	11	2527	25	37	47	2492
Mars	E.	43	7	57	2595	41	28	55	2588	39	49	43	2580	38	10	20	2572
SUN	E.	83	56	7	2682	82	19	3	2671	80	41	44	2658	79	4	7	2646
Aldebaran	W.	76	0	22	2307	77	46	12	2298	79	32	19	2285	81	18	41	2274
Pollux	W.	34	11	34	2363	35	56	2	2344	37	40	58	2326	39	26	20	2309
Mars	E.	29	51	29	2555	28	11	32	2556	26	31	37	2561	24	51	48	2546
SUN	E.	70	52	7	2589	69	12	57	2577	67	33	31	2567	65	53	51	2557
Aldebaran	W.	90	14	16	2227	92	2	4	2219	93	50	4	2211	95	38	16	2203
Pollux	W.	48	18	45	2240	50	6	13	2229	51	53	58	2219				2210
Mars	E.	57	32	6	2510	55	51	6	2502	54	9	55	2494				2485
Pollux	W.	62	45	35	2166	64	34	54	2159	66							2150
Regulus	W.	25	44	11	2174	27	33	18	2163	29							2154
SUN	E.	43	59	28	2489	42	17	17	2486	40							2477

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MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Midnight.			P. L. of diff.			XV ^h .			P. L. of diff.			XVIII ^h .			P. L. of diff.			XXI ^h .			P. L. of diff.		
			°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"
21	Pollux	E.	53	45	32	2843	52	12	0	2838	50	38	22	2832	49	4	35	2828								
	Regulus	E.	90	29	8	2799	88	54	39	2791	87	19	59	2782	85	45	9	2774								
	Mars	E.	112	4	9	3034	110	34	38	3025	109	4	56	3016	107	35	3	3007								
22	α Pegasi	W.	78	14	5	2873	79	46	59	2863	81	20	6	2852	82	52	26	2843								
	α Arietis	W.	34	50	51	2776	36	25	51	2763	38	1	7	2750	39	36	40	2738								
	Pollux	E.	41	14	8	2805	39	39	46	2801	38	5	20	2799	36	30	51	2798								
	Regulus	E.	77	48	11	2732	76	12	14	2723	74	36	5	2714	72	59	44	2706								
	Mars	E.	100	2	46	2961	98	31	44	2950	97	0	29	2942	95	29	3	2932								
23	α Pegasi	W.	90	43	17	2793	92	17	54	2785	93	52	42	2775	95	27	43	2766								
	α Arietis	W.	47	38	20	2681	49	15	26	2669	50	52	47	2658	52	30	23	2647								
	Pollux	E.	28	38	32	2811	27	4	19	2821	25	30	19	2835	23	56	36	2854								
	Regulus	E.	64	55	4	2660	63	17	30	2652	61	39	45	2641	60	1	46	2632								
	Mars	E.	87	48	49	2883	86	16	8	2873	84	43	14	2863	83	10	8	2853								
	SUN	E.	127	25	52	3020	125	56	4	3008	124	26	1	2997	122	55	44	2985								
24	α Arietis	W.	60	42	10	2591	62	21	17	2580	64	0	39	2569	65	40	17	2557								
	Aldebaran	W.	28	52	21	2770	30	27	28	2741	32	3	14	2714	33	39	36	2689								
	Regulus	E.	51	48	42	2585	50	9	26	2575	48	29	56	2566	46	50	14	2555								
	Mars	E.	75	21	17	2801	73	46	50	2791	72	12	10	2779	70	37	15	2769								
	SUN	E.	115	20	40	2928	113	48	56	2915	112	16	56	2902	110	44	40	2892								
25	α Arietis	W.	74	2	23	2501	75	43	35	2489	77	25	4	2477	79	6	49	2466								
	Aldebaran	W.	41	49	3	2586	43	28	16	2569	45	7	53	2552	46	47	54	2535								
	Regulus	E.	38	28	22	2509	36	47	21	2500	35	6	7	2490	33	24	40	2482								
	Mars	E.	62	39	12	2715	61	2	52	2705	59	26	18	2694	57	49	30	2684								
	SUN	E.	102	59	35	2830	101	25	46	2819	99	51	43	2805	98	17	22	2794								
26	α Arietis	W.	87	39	39	2408	89	23	2	2397	91	6	41	2385	92	50	37	2374								
	Aldebaran	W.	55	13	29	2460	56	55	39	2446	58	38	8	2431	60	20	58	2418								
	Regulus	E.	24	54	52	2453	23	12	32	2450	21	30	8	2451	19	47	46	2455								
	Mars	E.	49	42	0	2632	48	3	48	2623	46	25	24	2613	44	46	46	2604								
	SUN	E.	90	21	38	2732	88	45	40	2719	87	9	25	2707	85	32	54	2695								
27	Aldebaran	W.	68	59	51	2354	70	44	32	2341	72	29	32	2330	74	14	48	2318								
	Pollux	W.	27	19	12	2460	29	1	22	2432	30	44	11	2407	32	27	36	2384								
	Mars	E.	36	30	47	2567	34	51	7	2562	33	11	20	2557	31	31	26	2555								
	SUN	E.	77	26	15	2635	75	48	7	2623	74	9	43	2611	72	31	3	2599								
28	Aldebaran	W.	83	5	19	2264	84	52	12	2254	86	39	19	2244	88	26	41	2235								
	Pollux	W.	41	12	6	2294	42	58	14	2279	44	44	45	2266	46	31	35	2252								
	Mars	E.	23	12	11	2582	21	32	51	2601	19	53	57	2629	18	15	41	2668								
	SUN	E.	64	18	57	2647	62	33	49	2637	60	53	27	2628	59	12	53	2619								
29	Aldebaran	W.	97	26	39	2196	99	15	13	2190	101	3	55	2184	102	52	47	2179								
	Pollux	W.	55	30	16	2198	57	18	47	2189	59	7	31	2181	60	56	27	2173								
		E.	50	47	2	2480	49	5	20	2474	47	23	30	2469	45	41	33	2463								
		W.	70	3	45	2144	71	53	37	2140	73	43	35	2137	75	33	38	2134								
			33	2	11	2138	34	52	12	2132	36	42	22	2127	38	32	40	2123								
		10	20		2449	35	27	55	2450	33	45	33	2451	32	3	11	2454									

CONFIGURATIONS OF THE SATELLITES OF JUPITER,

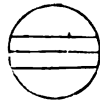
At 6^h 45^m, MEAN TIME.

Day of the Month.	<i>West.</i>				<i>East.</i>					
1				4	○	1	3	3		
2	1 ●			3	○	4		3		
3				1	○		3	4		
4				3	○	1	2	4		
5	2 ○		3	1	○			2		
6			3	2	○	1		4		
7				1	○	2		4		
8					○	1	2	4		
9				2	○	1	4	3		
10	1 ○			2	○		3			
11	2 ○			4	○	1	2			
12			4	3	1	○	2			
13			4	3	2	○	1			
14			4	3	1	○		2		
15			4			○	1	3	2	
16			4		3	1	○		3	
17	1 ○			4	2	○		3		
18	1 ●				4	○	3	2		
19				3	1	○	2		4	
20				3	3	○	1		4	
21	2 ●			3	1	○			4	
22	3 ●					○	1	2	4	
23					1	○		3	4	
24					2	○	1	3	4	
25	1 ●					○	3	2	4	
26					3	1	○	2	4	
27					3	2	○	1	4	
28					3	1	○	2		
29					4		○	1	2	3
30					4	1	2	○		3
31					4	2	○	1		3

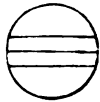
This Table represents, at 6^h 45^m after *Mean Noon* of each day of the month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page; the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the numeral. A white circle (○) at the left or right hand of the page, denotes that the Satellite placed by the side of it is on the disc of Jupiter, and a black circle (●) that it is either *behind* the disc, or in the shadow of Jupiter.

ECLIPSES OF THE SATELLITES OF JUPITER.

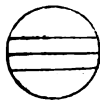
SATELLITE.	Day of the Month.	Mean Time.	Sidereal Time.	PHASE as seen in an inverting Telescope.
		h m s	h m s	
I.	2†	9 22 20.8	22 7 3.5	Em.
	4	3 51 10.4	16 42 51.9	Em.
	5	22 20 5.5	11 18 45.7	Em.
	7	16 48 54.0	5 54 32.8	Em.
	9	11 17 47.1	0 30 24.6	Em.
	11†	5 46 36.3	19 6 12.6	Em.
	13	0 15 30.7	18 42 5.7	Em.
	14	18 44 19.2	8 17 52.9	Em.
	16	13 13 11.3	2 53 43.7	Em.
	18*	7 42 0.1	91 29 31.2	Em.
	20	2 10 58.8	16 5 23.6	Em.
	21	20 39 41.5	10 41 10.1	Em.
	23	15 8 33.0	5 17 0.3	Em.
	25	9 37 21.1	23 52 47.1	Em.
	27	4 6 14.0	18 28 38.7	Em.
28	22 35 1.1	13 4 24.5	Em.	
30	17 3 51.6	7 40 13.7	Em.	
II.	3	15 49 6.4	4 38 49.2	Em.
	7	5 7 39.6	18 11 23.3	Em.
	10	18 25 57.3	7 43 42.3	Em.
	14*	7 44 37.9	21 16 23.2	Em.
	17	21 2 59.0	10 48 45.2	Em.
	21	10 21 45.4	0 21 32.4	Em.
	24	23 40 8.5	13 53 56.3	Em.
	28	12 59 1.1	3 26 49.8	Em.
III.	7	21 34 51.7	10 41 17.3	Im.
	8	0 59 2.3	14 6 2.2	Em.
	13	1 36 6.0	15 10 47.4	Im.
	15	5 0 47.9	18 36 2.3	Em.
	22†	5 36 49.7	19 39 46.3	Im.
	22†	9 2 1.4	23 5 31.9	Em.
	29	9 37 44.1	0 8 56.3	Im.
	29	13 3 25.3	3 35 11.2	Em.
IV.	2	10 12 20.6	22 57 11.6	Im.
	2	14 6 40.3	2 52 9.9	Em.
	19	4 18 0.7	18 8 54.9	Im.
	19†	8 18 11.3	22 9 45.4	Em.



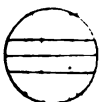
e *



e *



i e *



i *

APPROXIMATE SIDEREAL TIMES
OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER,
AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.			TRANSITS OF SATELLITES.						TRANSITS OF SHADOWS.								
	Immersion.			Emersion.			Ingress.			Egress.			Ingress.			Egress.		
	d	h	m	d	h	m	d	h	m	d	h	m	d	h	m	d	h	m
I.	2†	18	30				1*	21	6	1	23	25	1†	22	25	1	0	45
	4	13	6				3	15	42	3	18	1	3	17	1	3*	19	21
	5	7	42				4	10	18	4	12	37	4	11	37	5	13	57
	7	2	18				6	4	53	6	7	12	6	6	13	6	8	32
	9*	20	54				8	23	29	8	1	48	8	0	49	8	3	8
	11	15	29				10	18	5	10*	20	24	10*	19	24	10†	21	44
	12	10	5			In	11	12	41	12	15	1	12	14	0	12	16	20
	14	4	42				13	7	17	13	9	36	13	8	36	13	10	56
	16	23	18			the	15	1	53	15	4	13	15	3	12	15	5	32
	18	17	54				17*	20	29	17†	22	49	17†	21	48	17	0	8
	19	12	30				19	15	6	19	17	25	19	16	23	19	18	43
	21	7	6			Shadow.	20	9	42	20	12	1	20	10	59	20	13	19
	23	1	43				22	4	18	22	6	38	22	5	35	22	7	55
	25*	20	19				24†	22	35	24	1	14	24	0	11	24	2	31
	27	14	56				26	17	31	26*	19	51	26	18	47	26*	21	7
	28	9	32				27	12	7	28	14	27	27	13	23	28	15	43
30	4	9				29	6	44	29	9	4	29	7	58	29	10	18	
						31	1	21	31	3	40	31	2	34	31	4	54	
II.	3	23	7				1	4	52	1	7	46	1	7	30	1	10	26
	6	12	40				5†	18	24	5*	21	18	5*	21	3	5	23	58
	10	2	12			In	8	7	57	8	10	51	8	10	36	9	13	32
	14	15	45				12*	21	30	12	0	24	12	0	8	12	3	4
	17	5	18			the	15	11	3	16	13	58	16	13	41	16	16	37
	21†	18	53				19	0	37	19	3	31	19	3	13	19	6	9
	24	8	27			Shadow.	23	14	11	23	17	6	23	16	45	23†	19	42
	28†	22	2				26	3	46	26	6	40	26	6	18	26	9	14
31	11	37				30	17	21	30*	20	16	30†	19	50	30†	22	46	
III.	7	5	17	7	8	46	4	15	10	4†	18	39	4*	20	29	4	0	3
	14	9	49	14	13	18	11*	19	39	11	23	8	11	0	58	11	4	32
	22	14	25	22	17	54	18	0	12	18	3	42	18	5	26	18	9	1
	29	19	4	29†	22	34	25	4	50	25	8	20	25	9	55	25	13	30
IV.	1	10	38	2	14	20	10†	21	41	10	1	26	10	9	50	11	12	57
	18	6	2	18	9	49	27	17	31	27*	21	21	27	5	4	27	9	17

Day of the Month.	For correcting the Places of the Fixed Stars. At Mean Midnight,				Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0 ^h 56 ^m 30 ^s .	From Mean Noon of January 1.	
	Logarithm of						Days.	Day of the Year.
	A	B	C	D				
1	+1 2666	+0 4721	+0 0290	-0 5067	^h 11 ^m 18 ^s 54 66	192	273	747
2	1 2655	0 5200	0 0298	0 5048	11 14 58 75	193	274	750
3	1 2642	0 5631	0 0306	0 5028	11 11 2 84	194	275	753
4	+1 2628	+0 6022	+0 0314	-0 5008	11 7 6 94	195	276	756
5	1 2612	0 6380	0 0323	0 4986	11 3 11 03	196	277	758
6	1 2595	0 6709	0 0331	0 4964	10 59 15 12	197	278	761
7	+1 2576	+0 7014	+0 0339	-0 4941	10 55 19 22	198	279	764
8	1 2556	0 7298	0 0348	0 4916	10 51 23 31	199	280	767
9	1 2535	0 7564	0 0356	0 4891	10 47 27 40	200	281	769
10	+1 2513	+0 7813	+0 0364	-0 4865	10 43 31 49	201	282	772
11	1 2489	0 8047	0 0373	0 4838	10 39 35 59	202	283	775
12	1 2463	0 8268	0 0382	0 4810	10 35 39 68	203	284	778
13	+1 2436	+0 8477	+0 0390	-0 4781	10 31 43 77	204	285	780
14	1 2408	0 8676	0 0399	0 4751	10 27 47 86	205	286	783
15	1 2378	0 8865	0 0407	0 4720	10 23 51 95	206	287	786
16	+1 2346	+0 9045	+0 0416	-0 4688	10 19 56 05	207	288	789
17	1 2313	0 9216	0 0425	0 4656	10 16 0 14	208	289	791
18	1 2279	0 9380	0 0434	0 4622	10 12 4 23	209	290	794
19	+1 2242	+0 9537	+0 0443	-0 4587	10 8 8 32	210	291	797
20	1 2204	0 9687	0 0452	0 4552	10 4 12 41	211	292	799
21	1 2165	0 9831	0 0461	0 4516	10 0 16 51	212	293	802
22	+1 2123	+0 9969	+0 0470	-0 4479	9 56 20 60	213	294	805
23	1 2080	1 0101	0 0480	0 4441	9 52 24 69	214	295	808
24	1 2036	1 0229	0 0489	0 4402	9 48 28 78	215	296	810
25	+1 1989	+1 0351	+0 0499	-0 4362	9 44 32 87	216	297	813
26	1 1940	1 0469	0 0508	0 4321	9 40 36 96	217	298	816
27	1 1890	1 0583	0 0518	0 4280	9 36 41 06	218	299	819
28	+1 1837	+1 0693	+0 0527	-0 4237	9 32 45 15	219	300	821
29	1 1783	1 0798	0 0537	0 4194	9 28 49 24	220	301	824
30	1 1726	1 0900	0 0547	0 4150	9 24 53 33	221	302	827
31	1 1668	1 0999	0 0557	0 4106	9 20 57 42	222	303	830
32		1 1093	+0 0567	-0 4060	9 17 1 51	223	304	832

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Sidereal Time of the Meridian. [*]	Equation of Time, to be subtracted from Apparent Time.	Diff. for 1 hour.
		Apparent Right Ascension.	Diff. for 1 hour.	Apparent Declination.	Diff. for 1 hour.			
Tues.	1	14 25 7 ^h 64 ^m	9 ^s 817	S. 14 24 13 ^o 0 ^m	47 ^s 95	1 6 ^m 87 ^s	16 16 ^m 68 ^s	0 ^s 000
Wed.	2	14 29 3 ^h 25 ^m	9 ^s 851	14 43 23 ^o 9 ^m	47 ^s 25	1 6 ^m 98 ^s	16 17 ^m 62 ^s	0 ^s 000
Thur.	3	14 32 59 ^h 67 ^m	9 ^s 885	15 2 20 ^o 4 ^m	46 ^s 74	1 7 ^m 10 ^s	16 17 ^m 74 ^s	0 ^s 000
Frid.	4	14 36 56 ^h 91 ^m	9 ^s 919	15 21 2 ^o 1 ^m	46 ^s 10	1 7 ^m 21 ^s	16 17 ^m 06 ^s	0 ^s 000
Sat.	5	14 40 54 ^h 97 ^m	9 ^s 954	15 39 28 ^o 6 ^m	45 ^s 45	1 7 ^m 33 ^s	16 15 ^m 56 ^s	0 ^s 000
Sun.	6	14 44 53 ^h 86 ^m	9 ^s 988	15 57 39 ^o 4 ^m	44 ^s 78	1 7 ^m 44 ^s	16 13 ^m 24 ^s	0 ^s 111
Mon.	7	14 48 53 ^h 57 ^m	10 ^s 022	16 15 34 ^o 2 ^m	44 ^s 10	1 7 ^m 56 ^s	16 10 ^m 10 ^s	0 ^s 166
Tues.	8	14 52 54 ^h 10 ^m	10 ^s 057	16 33 12 ^o 6 ^m	43 ^s 40	1 7 ^m 68 ^s	16 6 ^m 13 ^s	0 ^s 222
Wed.	9	14 56 55 ^h 46 ^m	10 ^s 092	16 50 34 ^o 1 ^m	42 ^s 68	1 7 ^m 80 ^s	16 1 ^m 34 ^s	0 ^s 277
Thur.	10	15 0 57 ^h 66 ^m	10 ^s 126	17 7 38 ^o 4 ^m	41 ^s 94	1 7 ^m 92 ^s	15 55 ^m 72 ^s	0 ^s 333
Frid.	11	15 5 0 ^h 68 ^m	10 ^s 160	17 24 25 ^o 0 ^m	41 ^s 19	1 8 ^m 04 ^s	15 49 ^m 27 ^s	0 ^s 389
Sat.	12	15 9 4 ^h 53 ^m	10 ^s 195	17 40 53 ^o 5 ^m	40 ^s 42	1 8 ^m 16 ^s	15 41 ^m 98 ^s	0 ^s 444
Sun.	13	15 13 9 ^h 22 ^m	10 ^s 230	17 57 3 ^o 6 ^m	39 ^s 64	1 8 ^m 28 ^s	15 33 ^m 87 ^s	0 ^s 500
Mon.	14	15 17 14 ^h 75 ^m	10 ^s 265	18 12 54 ^o 9 ^m	38 ^s 85	1 8 ^m 40 ^s	15 24 ^m 93 ^s	0 ^s 556
Tues.	15	15 21 21 ^h 11 ^m	10 ^s 300	18 28 27 ^o 1 ^m	38 ^s 02	1 8 ^m 52 ^s	15 15 ^m 16 ^s	0 ^s 611
Wed.	16	15 25 28 ^h 30 ^m	10 ^s 335	18 43 39 ^o 6 ^m	37 ^s 19	1 8 ^m 64 ^s	15 4 ^m 55 ^s	0 ^s 667
Thur.	17	15 29 36 ^h 33 ^m	10 ^s 369	18 58 32 ^o 2 ^m	36 ^s 25	1 8 ^m 75 ^s	14 53 ^m 10 ^s	0 ^s 722
Frid.	18	15 33 45 ^h 19 ^m	10 ^s 404	19 13 4 ^o 5 ^m	35 ^s 48	1 8 ^m 87 ^s	14 40 ^m 83 ^s	0 ^s 778
Sat.	19	15 37 54 ^h 89 ^m	10 ^s 439	19 27 16 ^o 1 ^m	34 ^s 61	1 8 ^m 98 ^s	14 27 ^m 73 ^s	0 ^s 833
Sun.	20	15 42 5 ^h 42 ^m	10 ^s 473	19 41 6 ^o 7 ^m	33 ^s 71	1 9 ^m 09 ^s	14 13 ^m 79 ^s	0 ^s 889
Mon.	21	15 46 16 ^h 77 ^m	10 ^s 507	19 54 35 ^o 8 ^m	32 ^s 81	1 9 ^m 20 ^s	13 59 ^m 04 ^s	0 ^s 944
Tues.	22	15 50 28 ^h 94 ^m	10 ^s 541	20 7 43 ^o 2 ^m	31 ^s 89	1 9 ^m 31 ^s	13 43 ^m 47 ^s	0 ^s 1000
Wed.	23	15 54 41 ^h 93 ^m	10 ^s 574	20 20 28 ^o 5 ^m	30 ^s 95	1 9 ^m 42 ^s	13 27 ^m 09 ^s	0 ^s 1056
Thur.	24	15 58 55 ^h 71 ^m	10 ^s 607	20 32 51 ^o 2 ^m	30 ^s 00	1 9 ^m 53 ^s	13 9 ^m 91 ^s	0 ^s 1111
Frid.	25	16 3 10 ^h 28 ^m	10 ^s 640	20 44 51 ^o 1 ^m	29 ^s 03	1 9 ^m 63 ^s	12 51 ^m 93 ^s	0 ^s 1167
Sat.	26	16 7 25 ^h 64 ^m	10 ^s 672	20 56 27 ^o 8 ^m	28 ^s 05	1 9 ^m 73 ^s	12 33 ^m 19 ^s	0 ^s 1222
Sun.	27	16 11 41 ^h 76 ^m	10 ^s 703	21 7 40 ^o 9 ^m	27 ^s 05	1 9 ^m 83 ^s	12 13 ^m 68 ^s	0 ^s 1278
Mon.	28	16 15 58 ^h 62 ^m	10 ^s 733	21 18 30 ^o 2 ^m	26 ^s 05	1 9 ^m 93 ^s	11 53 ^m 43 ^s	0 ^s 1333
Tues.	29	16 20 16 ^h 20 ^m	10 ^s 763	21 28 55 ^o 3 ^m	25 ^s 02	1 10 ^m 02 ^s	11 32 ^m 46 ^s	0 ^s 1389
Wed.	30	16 24 34 ^h 50 ^m	10 ^s 791	21 38 55 ^o 8 ^m	23 ^s 99	1 10 ^m 11 ^s	11 10 ^m 79 ^s	0 ^s 1444
Thur.	31	16 28 53 ^h 46 ^m		S. 21 48 31 ^o 5 ^m		1 10 ^m 20 ^s	10 48 ^m 45 ^s	

* Mean Time of the Meridian, as determined by the Astronomical Observations at the Sidereal Observatory.

AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S			Equation of Time, to be added to Mean Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semidiam.*		
Tues.	1	^h 14 ^m 25 ^s 10 30	^o 8. 14 ['] 24 ["] 26 1	['] 16 ["] 8 8	^m 16 16 69	^h 14 ^m 41 ^s 26 99
Wed.	2	14 29 5 92	14 43 36 8	16 9 1	16 17 62	14 45 23 54
Thur.	3	14 33 2 35	15 2 33 2	16 9 3	16 17 74	14 49 20 09
Frid.	4	14 36 59 60	15 21 14 7	16 9 6	16 17 05	14 53 16 65
Sat.	5	14 40 57 66	15 39 41 0	16 9 8	16 15 54	14 57 13 21
Sun.	6	14 44 56 55	15 57 51 6	16 10 1	16 13 21	15 1 9 76
Mon.	7	14 48 56 26	16 15 46 2	16 10 3	16 10 06	15 5 6 32
Tues.	8	14 52 56 79	16 33 24 3	16 10 6	16 6 08	15 9 2 87
Wed.	9	14 56 58 15	16 50 45 6	16 10 8	16 1 28	15 12 59 43
Thur.	10	15 1 0 34	17 7 49 6	16 11 0	15 55 65	15 16 55 98
Frid.	11	15 5 3 35	17 24 35 9	16 11 2	15 49 19	15 20 52 54
Sat.	12	15 9 7 30	17 41 4 2	16 11 5	15 41 90	15 24 49 10
Sun.	13	15 13 11 87	17 57 14 0	16 11 7	15 33 78	15 28 45 65
Mon.	14	15 17 17 38	18 13 5 0	16 11 9	15 24 83	15 32 42 21
Tues.	15	15 21 23 72	18 28 36 8	16 12 1	15 15 05	15 36 38 76
Wed.	16	15 25 30 89	18 43 49 0	16 12 3	15 4 43	15 40 35 32
Thur.	17	15 29 38 89	18 58 41 3	16 12 5	14 52 98	15 44 31 88
Frid.	18	15 33 47 73	19 13 13 3	16 12 7	14 40 70	15 48 28 43
Sat.	19	15 37 57 40	19 27 24 6	16 12 9	14 27 59	15 52 24 99
Sun.	20	15 42 7 89	19 41 14 8	16 13 1	14 13 65	15 56 21 55
Mon.	21	15 46 19 21	19 54 43 6	16 13 3	13 58 89	16 0 18 10
Tues.	22	15 50 31 34	20 7 50 6	16 13 5	13 43 32	16 4 14 66
Wed.	23	15 54 44 29	20 20 35 5	16 13 7	13 26 93	16 8 11 22
Thur.	24	15 58 58 03	20 32 57 9	16 13 9	13 9 75	16 12 7 78
Frid.	25	16 3 12 56	20 44 57 4	16 14 0	12 51 77	16 16 4 33
Sat.	26	16 7 27 87	20 56 33 7	16 14 2	12 33 02	16 20 0 89
Sun.	27	16 11 43 94	21 7 46 5	16 14 3	12 13 51	16 23 57 45
Mon.	28	16 16 0 74	21 18 35 4	16 14 5	11 53 26	16 27 54 00
Tues.	29	16 20 18 27	21 29 0 2	16 14 6	11 32 29	16 31 50 56
Wed.	30	16 24 36 50	21 39 0 3	16 14 8	11 10 62	16 35 47 12
Thur.	31	16 28 55 40	S. 21 48 35 7	16 14 9	10 48 28	16 39 43 68

* Apparent Noon may be assumed the same as that for Mean Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S			
	Longitude.	Latitude.		Semidiameter.		Horizontal Parallax.	
	Noon.	Noon.	Noon.	Noon.	Midnight.	Noon.	Midnight.
1	181° 40' 46" 2	S. 0° 94'	9.9964341	16 25.3	16 25.1	60 15.7	60 7.7
2	219 40 55.3	0.91	9.9963241	16 20.0	16 15.9	59 56.2	59 41.1
3	220 41 6.2	0.86	9.9962146	16 11.0	16 5.3	59 23.1	59 2.2
4	221 41 18.9	0.77	9.9961056	15 59.1	15 52.4	58 39.5	58 15.1
5	222 41 33.3	0.67	9.9959972	15 45.5	15 38.5	57 49.8	57 24.1
6	223 41 49.4	0.54	9.9958893	15 31.5	15 24.7	56 58.4	56 33.1
7	224 42 7.0	0.40	9.9957822	15 18.2	15 12.1	56 9.4	55 47.1
8	225 42 26.1	0.27	9.9956759	15 6.6	15 1.5	55 26.2	55 24.1
9	226 42 46.7	0.14	9.9955707	14 57.2	14 53.5	54 52.5	54 38.1
10	227 43 8.8	S. 0° 02'	9.9954666	14 50.3	14 48.2	54 27.9	54 19.5
11	228 43 32.2	N. 0° 08'	9.9953639	14 46.6	14 45.8	54 13.7	54 10.6
12	229 43 57.0	0.16	9.9952627	14 45.6	14 46.0	54 9.8	54 11.4
13	230 44 23.2	0.22	9.9951631	14 47.0	14 48.7	54 15.2	54 21.2
14	231 44 50.7	0.24	9.9950653	14 50.8	14 53.4	54 28.9	54 38.4
15	232 45 19.6	0.23	9.9949693	14 56.3	14 59.7	54 49.3	55 1.5
16	233 45 49.9	0.20	9.9948753	15 3.3	15 7.1	55 14.2	55 22.8
17	234 46 21.7	0.13	9.9947834	15 11.1	15 15.2	55 43.5	55 58.7
18	235 46 55.0	N. 0° 04'	9.9946937	15 19.4	15 23.6	56 14.0	56 29.5
19	236 47 29.8	S. 0° 07'	9.9946062	15 27.8	15 31.9	56 44.2	56 59.7
20	237 48 6.1	0.19	9.9945209	15 35.9	15 39.7	57 14.4	57 28.3
21	238 48 44.0	0.32	9.9944378	15 43.3	15 46.8	57 41.8	57 54.6
22	239 49 23.6	0.45	9.9943568	15 50.2	15 53.3	58 6.9	58 18.1
23	240 50 4.8	0.58	9.9942778	15 56.3	15 59.0	58 29.2	58 39.3
24	241 50 47.6	0.68	9.9942007	16 1.6	16 3.9	58 48.7	58 57.4
25	242 51 32.0	0.78	9.9941255	16 6.1	16 8.0	59 5.3	59 12.3
26	243 52 18.0	0.84	9.9940520	16 9.6	16 10.9	59 18.3	59 22.9
27	244 53 5.6	0.88	9.9939801	16 11.8	16 12.3	59 26.1	59 27.9
28	245 53 54.7	0.88	9.9939097	16 12.2	16 11.5	59 27.5	59 25.2
29	246 54 45.2	0.86	9.9938407	16 10.3	16 8.4	59 20.7	59 13.9
30	247 55 37.1	0.80	9.9937732	16 5.9	16 2.7	59 4.4	58 52.9
31	248 56 30.2	S. 0° 73'	9.9937071	15 58.9	15 54.6	58 39.0	58 39.0

MEAN TIME.

		THE MOON'S							
Day of the Week.	Day of the Month.	Longitude.			Latitude.			Age.	Meridian
		Noon.	Midnight.		Noon.	Midnight.		Noon.	Passage.
		^a ⁱ ⁿ	^o ⁱ ⁿ	^s ^o ⁱ ⁿ	^s ^o ⁱ ⁿ	^d	^h ^m		
Sun.	1	202 34 20.8	209 58 34.4	S.4 59 9.9	S.4 50 45.3	28.2	23 26.9		
Mon.	2	217 20 8.4	224 38 2.4	4 37 32.6	4 19 52.6	29.2	0	♄	
Tue.	3	231 51 19.2	238 59 13.4	3 58 10.9	3 32 59.3	0.8	0 24.9		
Wed.	4	246 1 7.0	252 56 35.2	3 4 50.2	2 34 19.2	1.8	1 24.2		
Thu.	5	259 45 23.2	266 27 27.8	2 2 1.2	1 28 29.7	2.8	2 23.1		
Fri.	6	273 2 54.5	279 31 58.7	S.0 54 16.6	S.0 19 51.9	3.8	3 19.6		
Sat.	7	285 55 2.0	292 12 33.0	N.0 14 18.4	N.0 47 50.3	4.8	4 12.5		
Sun.	8	298 25 2.5	304 33 8.3	1 20 22.7	1 51 36.5	5.8	5 1.6		
Mon.	9	310 37 27.7	316 38 40.1	2 21 15.7	2 49 4.8	6.8	5 47.0		
Tue.	10	322 37 25.1	328 34 22.7	3 14 51.1	3 38 21.9	7.8	6 29.7		
Wed.	11	334 30 11.4	340 25 28.2	3 59 26.0	4 17 54.0	8.8	7 10.5		
Thu.	12	346 20 48.5	352 16 45.5	4 33 35.6	4 46 21.6	9.8	7 50.6		
Fri.	13	358 13 49.5	4 12 27.9	4 56 4.0	5 2 34.8	10.8	8 30.9		
Sat.	14	10 13 4.8	16 16 1.2	5 5 48.0	5 5 36.9	11.8	9 12.5		
Sun.	15	22 21 33.8	28 29 56.8	5 1 58.2	4 54 48.7	12.8	9 56.3		
Mon.	16	34 41 19.7	40 55 48.8	4 44 8.3	4 29 58.9	13.8	10 43.0		
Tue.	17	47 13 28.0	53 34 17.4	4 12 24.9	3 51 34.3	14.8	11 33.1		
Wed.	18	59 58 16.0	66 25 19.6	3 27 36.4	3 0 46.3	15.8	12 26.5		
Thu.	19	72 55 24.0	79 28 24.3	2 31 20.1	1 59 38.3	16.8	13 22.2		
Fri.	20	86 4 15.7	92 42 53.8	1 26 4.1	N.0 51 3.4	17.8	14 18.8		
Sat.	21	99 24 15.4	106 8 17.6	N.0 15 3.1	S.0 21 26.5	18.8	15 14.8		
Sun.	22	112 54 59.6	119 44 19.8	S.0 57 54.1	1 33 47.7	19.8	16 8.9		
Mon.	23	126 36 18.1	133 30 54.4	2 8 35.3	2 41 43.6	20.8	17 0.9		
Tue.	24	140 28 7.7	147 27 54.7	3 12 42.0	3 40 59.0	21.8	17 51.1		
Wed.	25	154 30 11.5	161 34 49.5	4 6 5.6	4 27 35.5	22.8	18 40.4		
Thu.	26	168 41 37.4	175 50 18.8	4 45 5.1	4 58 13.9	23.8	19 29.9		
Fri.	27	183 0 33.2	190 11 54.9	5 6 46.0	5 10 30.3	24.8	20 20.6		
Sat.	28	197 23 52.8	204 35 51.8	5 9 21.7	5 3 20.5	25.8	21 13.5		
Sun.	29	211 47 13.7	218 57 17.5	4 52 32.3	4 37 10.7	26.8	22 9.2		
Mon.	30	226 5 20.8	233 10 43.1	4 17 32.9	3 54 3.4	27.8	23 7.2		
Tue.	31	240 25 45.6	247 10 53.0	S.3 27 9.2	S.2 57 22.3	28.8	♄		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Dist. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Dist. Dec. for 10 ^m .
TUESDAY 1.				THURSDAY 3.			
0	13 15 52 ^{h m s} 50	S. 13 24 46 ^{o i n} 7	124 ^{''} 67	0	15 13 17 ^{h m s} 71	S. 22 4 37 ^{o i n} 8	78 ^{''} 28
1	13 18 14 ^{h m s} 09	13 38 14 ^{o i n} 7	133 ^{''} 80	1	15 15 49 ^{h m s} 04	22 12 9 ^{o i n} 8	78 ^{''} 27
2	13 20 35 ^{h m s} 90	13 51 37 ^{o i n} 5	135 ^{''} 90	2	15 18 20 ^{h m s} 49	22 19 32 ^{o i n} 7	78 ^{''} 27
3	13 22 57 ^{h m s} 95	14 4 54 ^{o i n} 9	181 ^{''} 98	3	15 20 52 ^{h m s} 05	22 26 46 ^{o i n} 3	78 ^{''} 27
4	13 25 20 ^{h m s} 23	14 18 6 ^{o i n} 8	131 ^{''} 07	4	15 23 23 ^{h m s} 72	22 33 50 ^{o i n} 6	69 ^{''} 25
5	13 27 42 ^{h m s} 75	14 31 13 ^{o i n} 2	130 ^{''} 10	5	15 25 55 ^{h m s} 50	22 40 45 ^{o i n} 5	67 ^{''} 48
6	13 30 5 49	14 44 13 ^{o i n} 8	129 ^{''} 15	6	15 28 27 ^{h m s} 37	22 47 31 ^{o i n} 1	66 ^{''} 28
7	13 32 28 ^{h m s} 47	14 57 8 ^{o i n} 7	128 ^{''} 17	7	15 30 59 ^{h m s} 33	22 54 7 ^{o i n} 2	64 ^{''} 43
8	13 34 51 ^{h m s} 68	15 9 57 ^{o i n} 7	127 ^{''} 17	8	15 33 31 ^{h m s} 38	23 0 33 ^{o i n} 9	62 ^{''} 27
9	13 37 15 ^{h m s} 13	15 22 40 ^{o i n} 7	126 ^{''} 17	9	15 36 3 51	23 6 51 ^{o i n} 1	61 ^{''} 27
10	13 39 38 ^{h m s} 81	15 35 17 ^{o i n} 7	125 ^{''} 12	10	15 38 35 ^{h m s} 70	23 12 58 ^{o i n} 7	59 ^{''} 46
11	13 42 2 71	15 47 48 ^{o i n} 4	124 ^{''} 08	11	15 41 7 97	23 18 56 ^{o i n} 8	58 ^{''} 07
12	13 44 26 ^{h m s} 85	16 0 12 ^{o i n} 9	123 ^{''} 02	12	15 43 40 ^{h m s} 29	23 24 45 ^{o i n} 2	56 ^{''} 47
13	13 46 51 ^{h m s} 22	16 12 31 ^{o i n} 0	121 ^{''} 93	13	15 46 12 ^{h m s} 67	23 30 24 ^{o i n} 0	54 ^{''} 25
14	13 49 15 ^{h m s} 82	16 24 42 ^{o i n} 6	120 ^{''} 83	14	15 48 45 ^{h m s} 09	23 35 53 ^{o i n} 1	53 ^{''} 23
15	13 51 40 ^{h m s} 66	16 36 47 ^{o i n} 6	119 ^{''} 72	15	15 51 17 ^{h m s} 55	23 41 12 ^{o i n} 5	51 ^{''} 62
16	13 54 5 72	16 48 45 ^{o i n} 9	118 ^{''} 60	16	15 53 50 ^{h m s} 04	23 46 22 ^{o i n} 2	50 ^{''} 00
17	13 56 31 ^{h m s} 02	17 0 37 ^{o i n} 5	117 ^{''} 47	17	15 56 22 ^{h m s} 56	23 51 22 ^{o i n} 2	48 ^{''} 28
18	13 58 56 ^{h m s} 54	17 12 22 ^{o i n} 3	116 ^{''} 30	18	15 58 55 ^{h m s} 09	23 56 12 ^{o i n} 5	46 ^{''} 73
19	14 1 22 ^{h m s} 29	17 24 0 1	115 ^{''} 12	19	16 1 27 ^{h m s} 64	24 0 52 ^{o i n} 9	45 ^{''} 12
20	14 3 48 ^{h m s} 27	17 35 30 ^{o i n} 8	113 ^{''} 95	20	16 4 0 19	24 5 23 ^{o i n} 6	43 ^{''} 48
21	14 6 14 ^{h m s} 47	17 46 54 ^{o i n} 5	112 ^{''} 73	21	16 6 32 ^{h m s} 74	24 9 44 ^{o i n} 5	41 ^{''} 35
22	14 8 40 ^{h m s} 89	17 58 10 ^{o i n} 9	111 ^{''} 52	22	16 9 5 27	24 13 55 ^{o i n} 6	40 ^{''} 22
23	14 11 7 54	S. 18 9 20 ^{o i n} 0	110 ^{''} 28	23	16 11 37 ^{h m s} 80	S. 24 17 56 ^{o i n} 9	38 ^{''} 57
WEDNESDAY 2.				FRIDAY 4.			
0	14 13 34 ^{h m s} 40	S. 18 20 21 ^{o i n} 7	109 ^{''} 05	0	16 14 10 ^{h m s} 29	S. 24 21 48 ^{o i n} 3	26 ^{''} 33
1	14 16 1 49	18 31 16 ^{o i n} 0	107 ^{''} 78	1	16 16 42 ^{h m s} 76	24 25 29 ^{o i n} 9	25 ^{''} 00
2	14 18 28 ^{h m s} 79	18 42 2 7	106 ^{''} 50	2	16 19 15 ^{h m s} 18	24 29 1 7	23 ^{''} 47
3	14 20 56 ^{h m s} 30	18 52 41 ^{o i n} 7	105 ^{''} 22	3	16 21 47 ^{h m s} 56	24 32 23 ^{o i n} 7	22 ^{''} 08
4	14 23 24 ^{h m s} 03	19 3 13 ^{o i n} 0	103 ^{''} 92	4	16 24 19 ^{h m s} 89	24 35 35 ^{o i n} 8	20 ^{''} 28
5	14 25 51 ^{h m s} 97	19 13 36 ^{o i n} 5	102 ^{''} 60	5	16 26 52 ^{h m s} 15	24 38 38 ^{o i n} 1	28 ^{''} 78
6	14 28 20 ^{h m s} 11	19 23 52 ^{o i n} 1	101 ^{''} 28	6	16 29 24 ^{h m s} 35	24 41 30 ^{o i n} 6	27 ^{''} 10
7	14 30 48 ^{h m s} 45	19 33 59 ^{o i n} 8	99 ^{''} 92	7	16 31 56 ^{h m s} 47	24 44 13 ^{o i n} 2	25 ^{''} 48
8	14 33 17 ^{h m s} 00	19 43 59 ^{o i n} 3	98 ^{''} 58	8	16 34 28 ^{h m s} 51	24 46 46 ^{o i n} 1	23 ^{''} 25
9	14 35 45 ^{h m s} 74	19 53 50 ^{o i n} 8	97 ^{''} 20	9	16 37 0 46	24 49 9 ^{o i n} 2	22 ^{''} 00
10	14 38 14 ^{h m s} 67	20 3 34 ^{o i n} 0	95 ^{''} 82	10	16 39 32 ^{h m s} 31	24 51 22 ^{o i n} 4	20 ^{''} 46
11	14 40 43 ^{h m s} 79	20 12 8 ^{o i n} 9	94 ^{''} 43	11	16 42 4 05	24 53 26 ^{o i n} 0	18 ^{''} 96
12	14 43 13 ^{h m s} 10	20 22 35 ^{o i n} 5	93 ^{''} 02	12	16 44 35 ^{h m s} 68	24 55 19 ^{o i n} 7	17 ^{''} 32
13	14 45 42 ^{h m s} 59	20 31 53 ^{o i n} 6	91 ^{''} 60	13	16 47 7 20	24 57 3 7	16 ^{''} 72
14	14 48 12 ^{h m s} 25	20 41 3 2	90 ^{''} 18	14	16 49 38 ^{h m s} 58	24 58 38 ^{o i n} 0	14 ^{''} 10
15	14 50 42 ^{h m s} 09	20 50 4 3	88 ^{''} 73	15	16 52 9 84	25 0 2 6	12 ^{''} 00
16	14 53 12 ^{h m s} 09	20 58 56 ^{o i n} 7	87 ^{''} 28	16	16 54 40 ^{h m s} 95	25 1 17 ^{o i n} 6	10 ^{''} 47
17	14 55 42 ^{h m s} 27	21 7 40 ^{o i n} 4	85 ^{''} 82	17	16 57 11 ^{h m s} 9 1		
18	14 58 12 ^{h m s} 60	21 16 15 ^{o i n} 3	84 ^{''} 37	18			
19	15 0 43 ^{h m s} 09	21 24 41 ^{o i n} 5	82 ^{''} 37	19			
20	15 3 13 ^{h m s} 73	21 32 58 ^{o i n} 7	81 ^{''} 38	20			
21	15 5 44 ^{h m s} 52	21 41 7 0	79 ^{''} 90	21			
22	15 8 15 ^{h m s} 45	21 49 6 4	78 ^{''} 37	22			
23	15 10 46 ^{h m s} 51	21 56 56 ^{o i n} 6	76 ^{''} 87	23			
24	15 13 17 ^{h m s} 71	S. 22 4 37 ^{o i n} 8		24			

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
SATURDAY 5.				MONDAY 7.			
0	17 14 43 ^s 87	S. 25 5 32 ^s 1	1 ^s 80	0	19 8 57 ^s 37	S. 22 16 25 ^s 2	65 ^s 98
1	17 17 13 ^s 40	25 5 21 ^s 3	3 ^s 37	1	19 11 11 ^s 74	22 9 49 ^s 3	67 ^s 05
2	17 19 42 ^s 71	25 5 11 ^s 1	4 ^s 92	2	19 13 25 ^s 73	22 3 7 ^s 0	68 ^s 10
3	17 22 11 ^s 81	25 4 31 ^s 6	6 ^s 47	3	19 15 39 ^s 35	21 56 18 ^s 4	69 ^s 15
4	17 24 40 ^s 69	25 3 52 ^s 8	8 ^s 00	4	19 17 52 ^s 59	21 49 23 ^s 5	70 ^s 17
5	17 27 9 ^s 34	25 3 4 ^s 8	9 ^s 53	5	19 20 5 ^s 45	21 42 22 ^s 5	71 ^s 18
6	17 29 37 ^s 76	25 2 7 ^s 6	11 ^s 05	6	19 22 17 ^s 95	21 35 15 ^s 4	72 ^s 20
7	17 32 5 ^s 94	25 1 1 ^s 3	12 ^s 57	7	19 24 30 ^s 06	21 28 2 ^s 2	73 ^s 18
8	17 34 33 ^s 87	24 59 45 ^s 9	14 ^s 07	8	19 26 41 ^s 81	21 20 43 ^s 1	74 ^s 17
9	17 37 1 ^s 55	24 58 21 ^s 5	15 ^s 58	9	19 28 53 ^s 17	21 13 18 ^s 1	75 ^s 15
10	17 39 28 ^s 97	24 56 48 ^s 0	17 ^s 05	10	19 31 4 ^s 17	21 5 47 ^s 2	76 ^s 10
11	17 41 56 ^s 13	24 55 5 ^s 7	18 ^s 55	11	19 33 14 ^s 79	20 58 10 ^s 6	77 ^s 05
12	17 44 23 ^s 01	24 53 14 ^s 4	20 ^s 02	12	19 35 25 ^s 04	20 50 28 ^s 3	77 ^s 98
13	17 46 49 ^s 62	24 51 14 ^s 3	21 ^s 48	13	19 37 34 ^s 91	20 42 40 ^s 4	78 ^s 92
14	17 49 15 ^s 95	24 49 5 ^s 4	22 ^s 98	14	19 39 44 ^s 42	20 34 46 ^s 9	79 ^s 82
15	17 51 42 ^s 00	24 46 47 ^s 8	24 ^s 37	15	19 41 53 ^s 55	20 26 48 ^s 0	80 ^s 72
16	17 54 7 ^s 76	24 44 21 ^s 6	25 ^s 82	16	19 44 2 ^s 31	20 18 43 ^s 7	81 ^s 62
17	17 56 33 ^s 23	24 41 46 ^s 7	27 ^s 28	17	19 46 10 ^s 71	20 10 34 ^s 0	82 ^s 48
18	17 58 58 ^s 40	24 39 3 ^s 3	28 ^s 65	18	19 48 18 ^s 74	20 2 19 ^s 1	83 ^s 37
19	18 1 23 ^s 26	24 36 11 ^s 4	30 ^s 05	19	19 50 26 ^s 41	19 53 58 ^s 9	84 ^s 22
20	18 3 47 ^s 82	24 33 11 ^s 1	31 ^s 45	20	19 52 33 ^s 72	19 45 33 ^s 6	85 ^s 07
21	18 6 12 ^s 07	24 30 2 ^s 4	32 ^s 83	21	19 54 40 ^s 67	19 37 3 ^s 2	85 ^s 90
22	18 8 36 ^s 01	24 26 45 ^s 4	34 ^s 22	22	19 56 47 ^s 25	19 28 27 ^s 8	86 ^s 72
23	18 10 59 ^s 62	S. 24 23 20 ^s 1	35 ^s 57	23	19 58 53 ^s 49	S. 19 19 47 ^s 5	87 ^s 58
SUNDAY 6.				TUESDAY 8.			
0	18 13 22 ^s 92	S. 24 19 46 ^s 7	36 ^s 92	0	20 0 59 ^s 36	S. 19 11 2 ^s 3	88 ^s 33
1	18 15 45 ^s 88	24 16 5 ^s 2	38 ^s 27	1	20 3 4 ^s 89	19 2 12 ^s 3	89 ^s 13
2	18 18 8 ^s 52	24 12 15 ^s 6	39 ^s 58	2	20 5 10 ^s 06	18 53 17 ^s 5	89 ^s 50
3	18 20 30 ^s 82	24 8 18 ^s 1	40 ^s 92	3	20 7 14 ^s 89	18 44 18 ^s 1	90 ^s 68
4	18 22 52 ^s 79	24 4 12 ^s 6	42 ^s 22	4	20 9 19 ^s 37	18 35 14 ^s 0	91 ^s 48
5	18 25 14 ^s 41	23 59 59 ^s 3	43 ^s 52	5	20 11 23 ^s 50	18 26 5 ^s 4	92 ^s 18
6	18 27 35 ^s 69	23 55 38 ^s 2	44 ^s 30	6	20 13 27 ^s 30	18 16 52 ^s 3	92 ^s 98
7	18 29 56 ^s 62	23 51 9 ^s 4	46 ^s 08	7	20 15 30 ^s 75	18 7 34 ^s 7	93 ^s 65
8	18 32 17 ^s 21	23 46 32 ^s 9	47 ^s 33	8	20 17 33 ^s 87	17 58 12 ^s 8	94 ^s 37
9	18 34 37 ^s 44	23 41 48 ^s 9	48 ^s 60	9	20 19 36 ^s 65	17 48 46 ^s 6	95 ^s 08
10	18 36 57 ^s 32	23 36 57 ^s 3	49 ^s 83	10	20 21 39 ^s 10	17 39 16 ^s 1	95 ^s 78
11	18 39 16 ^s 84	23 31 58 ^s 3	51 ^s 07	11	20 23 41 ^s 22	17 29 41 ^s 4	96 ^s 47
12	18 41 36 ^s 00	23 26 51 ^s 9	52 ^s 28	12	20 25 43 ^s 01	17 20 2 ^s 6	97 ^s 15
13	18 43 54 ^s 80	23 21 38 ^s 2	53 ^s 50	13	20 27 44 ^s 48	17 10 19 ^s 7	97 ^s 82
14	18 46 13 ^s 24	23 16 17 ^s 2	54 ^s 68	14	20 29 45 ^s 63	17 0 32 ^s 8	98 ^s 47
15	18 48 31 ^s 31	23 10 49 ^s 1	55 ^s 87	15	20 31 46 ^s 45	16 50 42 ^s 0	99 ^s 13
16	18 50 49 ^s 02	23 5 13 ^s 9	57 ^s 03	16	20 33 46 ^s 96	16 40 47 ^s 2	99 ^s 77
17	18 53 6 ^s 36	22 59 31 ^s 7	58 ^s 20	17	20 35 47 ^s 16	16 30 48 ^s 6	100 ^s 38
18	18 53 33 ^s 33	22 53 42 ^s 5	59 ^s 35	18	20 37 47 ^s 05	16 20 46 ^s 3	101 ^s 02
		22 47 46 ^s 4	60 ^s 48	19	20 39 46 ^s 63	16 10 40 ^s 2	101 ^s 62
		22 41 43 ^s 5	61 ^s 60	20	20 41 45 ^s 91	16 0 30 ^s 5	102 ^s 23
		22 35 33 ^s 9	62 ^s 72	21	20 43 44 ^s 89	15 50 17 ^s 1	102 ^s 82
		22 29 17 ^s 6	63 ^s 82	22	20 45 43 ^s 57	15 40 0 ^s 2	103 ^s 40
		22 23 54 ^s 7	64 ^s 92	23	20 47 41 ^s 96	15 29 39 ^s 8	103 ^s 97

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10".	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10".
<i>WEDNESDAY 9.</i>				<i>FRIDAY 11.</i>			
0	20 49 40 ^{h m s} .05	S. 15 19 16 ^{o ' "} .0	104 ["] .53	0	22 19 38 ^{h m s} .03	S. 6 8 57 ^{o ' "} .4	122 ["] .7
1	20 51 37 ^{h m s} .86	15 8 48 ^{o ' "} .8	105 ["] .08	1	22 21 26 ^{h m s} .42	5 56 43 ^{o ' "} .7	122 ["] .7
2	20 53 35 ^{h m s} .39	14 58 18 ^{o ' "} .3	105 ["] .63	2	22 23 14 ^{h m s} .72	5 44 28 ^{o ' "} .9	122 ["] .7
3	20 55 32 ^{h m s} .63	14 47 44 ^{o ' "} .5	106 ["] .17	3	22 25 2 ^{h m s} .91	5 32 12 ^{o ' "} .9	122 ["] .7
4	20 57 29 ^{h m s} .60	14 37 7 ^{o ' "} .5	106 ["] .70	4	22 26 51 ^{h m s} .02	5 19 55 ^{o ' "} .8	123 ["] .7
5	20 59 26 ^{h m s} .29	14 26 27 ^{o ' "} .3	107 ["] .22	5	22 28 39 ^{h m s} .04	5 7 37 ^{o ' "} .6	123 ["] .7
6	21 1 22 ^{h m s} .72	14 15 44 ^{o ' "} .0	107 ["] .73	6	22 30 26 ^{h m s} .98	4 55 18 ^{o ' "} .3	123 ["] .7
7	21 3 18 ^{h m s} .88	14 4 57 ^{o ' "} .6	108 ["] .23	7	22 32 14 ^{h m s} .83	4 42 58 ^{o ' "} .1	123 ["] .7
8	21 5 14 ^{h m s} .77	13 54 8 ^{o ' "} .2	108 ["] .73	8	22 34 2 ^{h m s} .61	4 30 37 ^{o ' "} .0	123 ["] .7
9	21 7 10 ^{h m s} .40	13 43 15 ^{o ' "} .8	109 ["] .22	9	22 35 50 ^{h m s} .38	4 18 14 ^{o ' "} .9	123 ["] .7
10	21 9 5 ^{h m s} .78	13 32 20 ^{o ' "} .5	109 ["] .68	10	22 37 37 ^{h m s} .97	4 5 51 ^{o ' "} .9	123 ["] .7
11	21 11 0 ^{h m s} .91	13 21 22 ^{o ' "} .4	110 ["] .17	11	22 39 25 ^{h m s} .55	3 53 28 ^{o ' "} .1	124 ["] .7
12	21 12 55 ^{h m s} .79	13 10 21 ^{o ' "} .4	110 ["] .63	12	22 41 13 ^{h m s} .06	3 41 3 ^{o ' "} .5	124 ["] .7
13	21 14 50 ^{h m s} .42	12 59 17 ^{o ' "} .6	111 ["] .07	13	22 43 0 ^{h m s} .52	3 28 38 ^{o ' "} .1	124 ["] .7
14	21 16 44 ^{h m s} .81	12 48 11 ^{o ' "} .2	111 ["] .53	14	22 44 47 ^{h m s} .94	3 16 12 ^{o ' "} .1	124 ["] .7
15	21 18 38 ^{h m s} .97	12 37 2 ^{o ' "} .0	111 ["] .97	15	22 46 35 ^{h m s} .30	3 3 45 ^{o ' "} .3	124 ["] .7
16	21 20 32 ^{h m s} .89	12 25 50 ^{o ' "} .2	112 ["] .38	16	22 48 22 ^{h m s} .63	2 51 17 ^{o ' "} .8	124 ["] .7
17	21 22 26 ^{h m s} .58	12 14 35 ^{o ' "} .9	112 ["] .82	17	22 50 9 ^{h m s} .91	2 38 49 ^{o ' "} .8	124 ["] .7
18	21 24 20 ^{h m s} .04	12 3 19 ^{o ' "} .0	113 ["] .23	18	22 51 57 ^{h m s} .16	2 26 21 ^{o ' "} .2	124 ["] .7
19	21 26 13 ^{h m s} .28	11 51 59 ^{o ' "} .6	113 ["] .63	19	22 53 44 ^{h m s} .38	2 13 52 ^{o ' "} .0	124 ["] .7
20	21 28 6 ^{h m s} .30	11 40 37 ^{o ' "} .8	114 ["] .02	20	22 55 31 ^{h m s} .58	2 1 22 ^{o ' "} .4	125 ["] .7
21	21 29 59 ^{h m s} .10	11 29 13 ^{o ' "} .7	114 ["] .43	21	22 57 18 ^{h m s} .75	1 48 52 ^{o ' "} .3	125 ["] .7
22	21 31 51 ^{h m s} .70	11 17 47 ^{o ' "} .1	114 ["] .80	22	22 59 5 ^{h m s} .90	1 36 21 ^{o ' "} .7	125 ["] .7
23	21 33 44 ^{h m s} .09	S. 11 6 18 ^{o ' "} .3	115 ["] .18	23	23 0 53 ^{h m s} .04	S. 1 23 50 ^{o ' "} .8	125 ["] .7
<i>THURSDAY 10.</i>				<i>SATURDAY 12.</i>			
0	21 35 36 ^{h m s} .27	S. 10 54 47 ^{o ' "} .2	115 ["] .55	0	23 2 40 ^{h m s} .17	S. 1 11 19 ^{o ' "} .5	125 ["] .7
1	21 37 28 ^{h m s} .26	10 43 13 ^{o ' "} .9	115 ["] .92	1	23 4 27 ^{h m s} .29	0 58 47 ^{o ' "} .9	125 ["] .7
2	21 39 20 ^{h m s} .05	10 31 38 ^{o ' "} .4	116 ["] .25	2	23 6 14 ^{h m s} .41	0 46 16 ^{o ' "} .0	125 ["] .7
3	21 41 11 ^{h m s} .65	10 20 0 ^{o ' "} .9	116 ["] .62	3	23 8 1 ^{h m s} .53	0 33 43 ^{o ' "} .9	125 ["] .7
4	21 43 3 ^{h m s} .06	10 8 21 ^{o ' "} .2	116 ["] .95	4	23 9 48 ^{h m s} .66	0 21 11 ^{o ' "} .6	125 ["] .7
5	21 44 54 ^{h m s} .29	9 56 39 ^{o ' "} .5	117 ["] .27	5	23 11 35 ^{h m s} .80	S. 0 8 39 ^{o ' "} .1	125 ["] .7
6	21 46 45 ^{h m s} .34	9 44 55 ^{o ' "} .9	117 ["] .60	6	23 13 22 ^{h m s} .95	N. 0 3 53 ^{o ' "} .5	125 ["] .7
7	21 48 36 ^{h m s} .21	9 33 10 ^{o ' "} .3	117 ["] .93	7	23 15 10 ^{h m s} .12	0 16 26 ^{o ' "} .2	125 ["] .7
8	21 50 26 ^{h m s} .91	9 21 22 ^{o ' "} .7	118 ["] .22	8	23 16 57 ^{h m s} .31	0 28 59 ^{o ' "} .0	125 ["] .7
9	21 52 17 ^{h m s} .45	9 9 33 ^{o ' "} .4	118 ["] .53	9	23 18 44 ^{h m s} .52	0 41 31 ^{o ' "} .8	125 ["] .7
10	21 54 7 ^{h m s} .82	8 57 42 ^{o ' "} .2	118 ["] .83	10	23 20 31 ^{h m s} .77	0 54 4 ^{o ' "} .5	125 ["] .7
11	21 55 58 ^{h m s} .02	8 45 49 ^{o ' "} .2	119 ["] .12	11	23 22 19 ^{h m s} .05	1 6 37 ^{o ' "} .2	125 ["] .7
12	21 57 48 ^{h m s} .08	8 33 54 ^{o ' "} .5	119 ["] .40	12	23 24 6 ^{h m s} .37	1 19 9 ^{o ' "} .8	125 ["] .7
13	21 59 37 ^{h m s} .98	8 21 58 ^{o ' "} .1	119 ["] .67	13	23 25 53 ^{h m s} .73	1 31 42 ^{o ' "} .3	125 ["] .7
14	22 1 27 ^{h m s} .74	8 10 0 ^{o ' "} .1	119 ["] .95	14	23 27 41 ^{h m s} .13	1 44 14 ^{o ' "} .6	125 ["] .7
15	22 3 17 ^{h m s} .35	7 58 0 ^{o ' "} .4	120 ["] .20	15	23 29 28 ^{h m s} .58	1 56 46 ^{o ' "} .6	125 ["] .7
16	22 5 6 ^{h m s} .82	7 45 59 ^{o ' "} .2	120 ["] .47	16	23 31 16 ^{h m s} .09	2 9 18 ^{o ' "} .5	125 ["] .7
17	22 6 56 ^{h m s} .15	7 33 56 ^{o ' "} .4	120 ["] .70	17	23 33 3 ^{h m s} .65	2 21 50 ^{o ' "} .0	125 ["] .7
18	22 8 45 ^{h m s} .36	7 21 52 ^{o ' "} .2	120 ["] .95	18	23 34 51 ^{h m s} .28	2 34 21 ^{o ' "} .2	125 ["] .7
19	22 10 34 ^{h m s} .43	7 9 46 ^{o ' "} .5	121 ["] .20	19	23 36 38 ^{h m s} .97	2 46 52 ^{o ' "} .0	125 ["] .7
20	22 12 23 ^{h m s} .38	6 57 39 ^{o ' "} .3	121 ["] .42	20	23 38 26 ^{h m s} .73	2 59 22 ^{o ' "} .4	125 ["] .7
21	22 14 12 ^{h m s} .21	6 45 30 ^{o ' "} .8	121 ["] .63	21	23 40 14 ^{h m s} .56	3 11 52 ^{o ' "} .4	124 ["] .7
22	22 16 0 ^{h m s} .93	6 33 21 ^{o ' "} .0	121 ["] .87	22	23 42 2 ^{h m s} .47	3 24 21 ^{o ' "} .9	124 ["] .7
23	22 17 49 ^{h m s} .53	6 21 9 ^{o ' "} .8	122 ["] .07	23	23 43 50 ^{h m s} .46		
24	22 19 38 ^{h m s} .03	S. 6 8 57 ^{o ' "} .4		24	23 45 38 ^{h m s} .54		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{ms} .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{ms} .
<i>SUNDAY 13.</i>				<i>TUESDAY 15.</i>			
0	23 45 38.54	N. 3 49 19.2	124.62	0	1 14 59.67	N. 13 22 33.5	110.87
1	23 47 26.71	4 1 46.9	124.52	1	1 16 56.42	13 33 38.7	110.37
2	23 49 14.97	4 14 14.0	124.42	2	1 18 53.43	13 44 40.9	109.88
3	23 51 3.32	4 26 40.5	124.27	3	1 20 50.71	13 55 40.2	109.35
4	23 52 51.78	4 39 6.1	124.15	4	1 22 48.25	14 6 36.3	108.83
5	23 54 40.34	4 51 31.0	124.02	5	1 24 46.06	14 17 29.3	108.28
6	23 56 29.01	5 3 55.1	123.87	6	1 26 44.14	14 28 19.0	107.70
7	23 58 17.79	5 16 18.3	123.73	7	1 28 42.50	14 39 5.6	107.20
8	0 0 6.68	5 28 40.7	123.56	8	1 30 41.13	14 49 48.8	106.63
9	0 1 55.70	5 41 2.0	123.40	9	1 32 40.05	15 0 28.6	106.07
10	0 3 44.84	5 53 22.4	123.23	10	1 34 39.24	15 11 5.0	105.48
11	0 5 34.10	6 5 41.8	123.05	11	1 36 38.72	15 21 37.9	104.88
12	0 7 23.50	6 18 0.1	122.87	12	1 38 38.48	15 32 7.2	104.28
13	0 9 13.03	6 30 17.3	122.68	13	1 40 38.53	15 42 32.9	103.68
14	0 11 2.70	6 42 33.4	122.47	14	1 42 38.88	15 52 55.0	103.05
15	0 12 52.51	6 54 48.2	122.27	15	1 44 39.51	16 3 13.3	102.42
16	0 14 42.47	7 7 1.8	122.05	16	1 46 40.45	16 13 27.8	101.77
17	0 16 32.57	7 19 14.1	121.83	17	1 48 41.68	16 23 38.4	101.12
18	0 18 22.84	7 31 25.1	121.60	18	1 50 43.21	16 33 45.1	100.47
19	0 20 13.25	7 43 34.7	121.35	19	1 52 45.04	16 43 47.9	99.77
20	0 22 3.83	7 55 42.8	121.13	20	1 54 47.18	16 53 46.5	99.10
21	0 23 54.57	8 7 49.5	120.87	21	1 56 49.62	17 3 41.1	98.38
22	0 25 45.48	8 19 54.7	120.58	22	1 58 52.37	17 13 31.4	97.70
23	0 27 36.57	N. 8 31 58.2	120.33	23	2 0 55.42	N. 17 23 17.6	96.97
<i>MONDAY 14.</i>				<i>WEDNESDAY 16.</i>			
0	0 29 27.82	N. 8 44 0.2	120.05	0	2 2 58.79	N. 17 32 59.4	96.23
1	0 31 19.26	8 56 0.5	119.75	1	2 5 2.47	17 42 36.8	95.52
2	0 33 10.88	9 7 59.0	119.47	2	2 7 6.46	17 52 9.9	94.75
3	0 35 2.69	9 19 55.8	119.17	3	2 9 10.77	18 1 38.4	93.98
4	0 36 54.69	9 31 50.8	118.86	4	2 11 15.40	18 11 2.3	93.22
5	0 38 46.88	9 43 43.9	118.55	5	2 13 20.34	18 20 21.6	92.43
6	0 40 39.27	9 55 35.2	118.20	6	2 15 25.60	18 29 36.2	91.65
7	0 42 31.85	10 7 24.4	117.88	7	2 17 31.18	18 38 46.1	90.83
8	0 44 24.65	10 19 11.7	117.53	8	2 19 37.08	18 47 51.1	90.02
9	0 46 17.65	10 30 56.9	117.18	9	2 21 43.30	18 56 51.2	89.18
10	0 48 10.86	10 42 40.0	116.82	10	2 23 49.85	19 5 46.3	88.37
11	0 50 4.28	10 54 20.9	116.47	11	2 25 56.72	19 14 36.5	87.50
12	0 51 57.92	11 5 59.7	116.08	12	2 28 3.90	19 23 21.5	86.65
13	0 53 51.78	11 17 36.2	115.70	13	2 30 11.42	19 32 1.4	85.77
14	0 55 45.86	11 29 10.4	115.30	14	2 32 19.27	19 40 36.0	84.90
15	0 57 40.17	11 40 42.2	114.90	15	2 34 27.44	19 49 5.4	84.00
16	0 59 34.70	11 52 11.6	114.50	16	2 36 35.93	19 57 29.4	83.08
17	1 1 29.47	12 3 38.6	114.07	17	2 38 44.76	20 5 47.9	82.18
18	1 3 24.48	12 15 3.0	113.65	18	2 40 53.91	20 14 1.0	81.25
19	1 5 19.73	12 26 24.9	113.20	19	2 43 3.38	20 22 8.5	80.22
20	1 7 15.22	12 37 44.1	112.75	20	2 45 13.18	20 30 10.4	79.27
21	1 9 10.93	12 49 0.6	112.30	21	2 47 23.31	20 38 6.6	78.40
22	1 11 6.94	13 0 14.4	111.83	22	2 49 33.76	20 45 57.0	77.43
23	1 13 3.17	13 11 25.4	111.35	23	2 51 44.53	20 53 41.6	76.45
24	1 15 19.67	N. 13 22 33.5		24	2 53 55.63	N. 21 1 20.3	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^{rs} .	Hour.	Right Ascension.	Declination.	Diff. D for 10
THURSDAY 17.				SATURDAY 19.			
0	2 53 55 ^{h m s} .63	N.21 1 20 ^{o i n} .3	75 ^{''} .47	0	4 44 32 ^{h m s} .20	N.24 52 12 ^o .6	15 ^{''} .9
1	2 56 7 ^{h m s} .06	21 8 53 ^{o i n} .1	74 ^{''} .48	1	4 46 56 ^{h m s} .25	24 53 48 ^o .5	14 ^{''} .51
2	2 58 18 ^{h m s} .80	21 16 19 ^o .8	73 ^{''} .48	2	4 49 20 ^{h m s} .46	24 55 15 ^o .7	13 ^{''} .11
3	3 0 30 ^{h m s} .87	21 23 40 ^o .4	72 ^{''} .48	3	4 51 44 ^{h m s} .83	24 56 34 ^o .4	11 ^{''} .61
4	3 2 43 ^{h m s} .26	21 30 54 ^o .9	71 ^{''} .37	4	4 54 9 ^{h m s} .34	24 57 44 ^o .3	10 ^{''} .21
5	3 4 55 ^{h m s} .97	21 38 3 ^o .1	70 ^{''} .28	5	4 56 33 ^{h m s} .99	24 58 45 ^o .5	8 ^{''} .7
6	3 7 9 ^{h m s} .00	21 45 5 ^o .0	69 ^{''} .27	6	4 58 58 ^{h m s} .77	24 59 38 ^o .1	7 ^{''} .21
7	3 9 22 ^{h m s} .35	21 52 0 ^o .6	68 ^{''} .18	7	5 1 23 ^{h m s} .69	25 0 21 ^o .8	5 ^{''} .31
8	3 11 36 ^{h m s} .02	21 58 49 ^o .7	67 ^{''} .18	8	5 3 48 ^{h m s} .73	25 0 56 ^o .8	4 ^{''} .21
9	3 13 49 ^{h m s} .99	22 5 32 ^o .4	66 ^{''} .08	9	5 6 13 ^{h m s} .89	25 1 23 ^o .0	2 ^{''} .29
10	3 16 4 ^{h m s} .29	22 12 8 ^o .5	64 ^{''} .90	10	5 8 39 ^{h m s} .15	25 1 40 ^o .4	1 ^{''} .0
11	3 18 18 ^{h m s} .89	22 18 37 ^o .9	63 ^{''} .80	11	5 11 4 ^{h m s} .53	25 1 48 ^o .9	0 ^{''} .0
12	3 20 33 ^{h m s} .80	22 25 0 ^o .7	62 ^{''} .67	12	5 13 30 ^{h m s} .00	25 1 48 ^o .6	1 ^{''} .21
13	3 22 49 ^{h m s} .03	22 31 16 ^o .7	61 ^{''} .53	13	5 15 55 ^{h m s} .57	25 1 39 ^o .4	2 ^{''} .28
14	3 25 4 ^{h m s} .56	22 37 25 ^o .9	60 ^{''} .38	14	5 18 21 ^{h m s} .22	25 1 21 ^o .3	4 ^{''} .50
15	3 27 20 ^{h m s} .39	22 43 28 ^o .2	59 ^{''} .23	15	5 20 46 ^{h m s} .95	25 0 54 ^o .3	6 ^{''} .00
16	3 29 36 ^{h m s} .53	22 49 23 ^o .6	58 ^{''} .08	16	5 23 12 ^{h m s} .75	25 0 18 ^o .8	7 ^{''} .41
17	3 31 52 ^{h m s} .96	22 55 11 ^o .9	56 ^{''} .88	17	5 25 38 ^{h m s} .63	24 59 53 ^o .5	8 ^{''} .27
18	3 34 9 ^{h m s} .69	23 0 53 ^o .2	55 ^{''} .70	18	5 28 4 ^{h m s} .56	24 58 29 ^o .7	10 ^{''} .41
19	3 36 26 ^{h m s} .72	23 6 27 ^o .4	54 ^{''} .50	19	5 30 30 ^{h m s} .55	24 57 36 ^o .9	11 ^{''} .28
20	3 38 44 ^{h m s} .93	23 11 54 ^o .4	53 ^{''} .30	20	5 32 56 ^{h m s} .59	24 56 25 ^o .2	13 ^{''} .46
21	3 41 1 ^{h m s} .64	23 17 14 ^o .2	52 ^{''} .07	21	5 35 22 ^{h m s} .67	24 55 4 ^o .5	14 ^{''} .23
22	3 43 19 ^{h m s} .53	23 22 26 ^o .6	50 ^{''} .85	22	5 37 48 ^{h m s} .79	24 53 34 ^o .9	16 ^{''} .43
23	3 45 37 ^{h m s} .70	N.23 27 31 ^o .7	49 ^{''} .62	23	5 40 14 ^{h m s} .93	N.24 51 56 ^o .3	17 ^{''} .28
FRIDAY 18.				SUNDAY 20.			
0	3 47 56 ^{h m s} .15	N.23 32 29 ^o .4	48 ^{''} .37	0	5 42 41 ^{h m s} .10	N.24 50 8 ^o .7	19 ^{''} .43
1	3 50 14 ^{h m s} .88	23 37 19 ^o .6	47 ^{''} .12	1	5 45 7 ^{h m s} .29	24 48 12 ^o .2	20 ^{''} .23
2	3 52 33 ^{h m s} .87	23 42 2 ^o .3	45 ^{''} .87	2	5 47 33 ^{h m s} .49	24 46 6 ^o .6	22 ^{''} .40
3	3 54 53 ^{h m s} .14	23 46 37 ^o .5	44 ^{''} .57	3	5 49 59 ^{h m s} .70	24 43 52 ^o .2	23 ^{''} .28
4	3 57 12 ^{h m s} .67	23 51 4 ^o .9	43 ^{''} .30	4	5 52 25 ^{h m s} .90	24 41 28 ^o .7	25 ^{''} .10
5	3 59 32 ^{h m s} .46	23 55 24 ^o .7	42 ^{''} .02	5	5 54 52 ^{h m s} .10	24 38 56 ^o .3	26 ^{''} .21
6	4 1 52 ^{h m s} .51	23 59 36 ^o .8	40 ^{''} .70	6	5 57 18 ^{h m s} .29	24 36 15 ^o .0	28 ^{''} .28
7	4 4 12 ^{h m s} .81	24 3 41 ^o .0	39 ^{''} .40	7	5 59 44 ^{h m s} .46	24 33 24 ^o .7	29 ^{''} .27
8	4 6 38 ^{h m s} .36	24 7 37 ^o .4	38 ^{''} .08	8	6 2 10 ^{h m s} .60	24 30 25 ^o .5	31 ^{''} .27
9	4 8 54 ^{h m s} .15	24 11 25 ^o .9	36 ^{''} .75	9	6 4 36 ^{h m s} .71	24 27 17 ^o .3	32 ^{''} .23
10	4 11 15 ^{h m s} .18	24 15 6 ^o .4	35 ^{''} .42	10	6 7 2 ^{h m s} .79	24 24 0 ^o .3	34 ^{''} .23
11	4 13 36 ^{h m s} .45	24 18 38 ^o .9	34 ^{''} .08	11	6 9 28 ^{h m s} .82	24 20 34 ^o .3	35 ^{''} .20
12	4 15 57 ^{h m s} .94	24 22 3 ^o .4	32 ^{''} .73	12	6 11 54 ^{h m s} .81	24 16 59 ^o .5	37 ^{''} .28
13	4 18 19 ^{h m s} .67	24 25 19 ^o .8	31 ^{''} .37	13	6 14 20 ^{h m s} .74	24 13 15 ^o .8	38 ^{''} .77
14	4 20 41 ^{h m s} .61	24 28 28 ^o .0	30 ^{''} .00	14	6 16 46 ^{h m s} .62	24 9 23 ^o .2	40 ^{''} .23
15	4 23 3 ^{h m s} .78	24 31 28 ^o .0	28 ^{''} .62	15	6 19 12 ^{h m s} .43	24 5 21 ^o .8	41 ^{''} .78
16	4 25 26 ^{h m s} .16	24 34 19 ^o .8	27 ^{''} .28	16	6 21 38 ^{h m s} .17	24 1 11 ^o .6	43 ^{''} .17
17	4 27 48 ^{h m s} .74	24 37 3 ^o .2	25 ^{''} .87	17	6 24 3 ^{h m s} .83	23 56 52 ^o .6	44 ^{''} .68
18	4 30 11 ^{h m s} .53	24 39 38 ^o .4	24 ^{''} .47	18	6 26 29 ^{h m s} .42	23 52 24 ^o .9	46 ^{''} .07
19	4 32 34 ^{h m s} .51	24 42 5 ^o .2	23 ^{''} .08	19	6 28 54 ^{h m s} .91	23 47 48 ^o .5	47 ^{''} .58
20	4 34 57 ^{h m s} .69	24 44 23 ^o .7	21 ^{''} .65	20	6 31 20 ^{h m s} .32	23 43 3 ^o .4	48 ^{''} .27
21	4 37 21 ^{h m s} .05	24 46 33 ^o .6	20 ^{''} .25	21	6 33 45 ^{h m s} .63	23 38 9 ^o .6	50 ^{''} .40
22	4 39 44 ^{h m s} .59	24 48 35 ^o .1	18 ^{''} .83	22	6 36 10 ^{h m s} .84	23 33 7 ^o .2	51 ^{''} .25
23	4 42 8 ^{h m s} .31	24 50 28 ^o .1	17 ^{''} .42	23	6 38 35 ^{h m s} .95	23 27 56 ^o .1	53 ^{''} .27
24	4 44 32 ^{h m s} .20	N.24 52 12 ^o .6		24	6 41 0 ^{h m s} .93	N.23 22 36 ^o .5	

MEAN TIME,

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Year.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
MONDAY 21.				WEDNESDAY 23.			
0	6 ^h 41 ^m 0 ^s ·93	N. 23 22 36·5	84·70	0	8 23 45·21	N. 16 33 45·6	113·21
1	6 43 25·80	23 17 8·3	86·12	1	8 36 1·33	16 22 26·3	114·11
2	6 45 50·56	23 11 31·6	87·52	2	8 38 17·24	16 11 1·2	115·11
3	6 48 15·19	23 5 46·5	88·93	3	8 40 32·96	15 59 30·4	116·01
4	6 50 39·69	22 59 52·9	60·33	4	8 42 48·48	15 47 54·0	117·00
5	6 53 4·03	22 53 50·9	61·72	5	8 45 3·80	15 36 12·0	117·91
6	6 55 28·28	22 47 40·6	63·12	6	8 47 18·93	15 24 24·4	118·81
7	6 57 52·38	22 41 21·9	64·48	7	8 49 33·86	15 12 31·5	119·71
8	7 0 16·32	22 34 55·0	65·97	8	8 51 48·60	15 0 33·2	120·60
9	7 2 40·12	22 28 19·8	67·23	9	8 54 3·15	14 48 29·6	121·41
10	7 5 3·77	22 21 36·4	68·58	10	8 56 17·50	14 36 20·8	122·21
11	7 7 27·26	22 14 44·9	69·98	11	8 58 31·68	14 24 6·9	123·11
12	7 9 50·59	22 7 45·3	71·28	12	9 0 45·66	14 11 47·9	124·00
13	7 12 13·76	22 0 37·6	72·60	13	9 2 59·46	13 59 23·9	124·81
14	7 14 36·76	21 53 22·0	73·93	14	9 5 13·09	13 46 55·0	125·61
15	7 16 59·60	21 45 58·4	75·26	15	9 7 26·53	13 34 21·2	126·41
16	7 19 22·26	21 38 26·9	76·57	16	9 9 39·80	13 21 42·6	127·21
17	7 21 44·75	21 30 47·5	77·87	17	9 11 52·90	13 8 59·4	127·91
18	7 24 7·96	21 23 0·3	79·15	18	9 14 5·82	12 56 11·5	128·71
19	7 26 29·19	21 15 5·4	80·42	19	9 16 18·57	12 43 19·1	129·41
20	7 28 51·14	21 7 2·8	81·78	20	9 18 31·15	12 30 22·2	130·21
21	7 31 12·90	20 58 52·5	82·97	21	9 20 43·57	12 17 20·9	130·91
22	7 33 34·47	20 50 34·7	84·28	22	9 22 55·83	12 4 15·3	131·61
23	7 35 55·85	N. 20 42 9·3	85·47	23	9 25 7·93	N. 11 51 5·5	132·21
TUESDAY 22.				THURSDAY 24.			
0	7 38 17·95	N. 20 33 36·5	86·70	0	9 27 19·87	N. 11 37 51·5	133·01
1	7 40 38·05	20 24 56·3	87·98	1	9 29 31·66	11 24 33·4	133·61
2	7 42 58·85	20 16 8·6	89·15	2	9 31 43·30	11 11 11·3	134·21
3	7 45 19·46	20 7 13·7	90·28	3	9 33 54·80	10 57 45·3	134·81
4	7 47 39·87	19 58 11·6	91·55	4	9 36 6·15	10 44 15·4	135·61
5	7 50 0·08	19 49 2·3	92·73	5	9 38 17·35	10 30 41·7	136·21
6	7 52 20·08	19 39 45·9	93·92	6	9 40 28·43	10 17 4·3	136·81
7	7 54 39·89	19 30 22·4	95·08	7	9 42 39·37	10 3 23·3	137·42
8	7 56 59·49	19 20 51·9	96·23	8	9 44 50·17	9 49 38·7	138·00
9	7 59 18·89	19 11 14·5	97·38	9	9 47 0·86	9 35 50·7	138·58
10	8 1 38·09	19 1 30·2	98·52	10	9 49 11·41	9 21 59·2	139·13
11	8 3 57·08	18 51 39·1	99·65	11	9 51 21·85	9 8 4·4	139·67
12	8 6 15·86	18 41 41·2	100·75	12	9 53 32·17	8 54 6·4	140·20
13	8 8 34·44	18 31 36·7	101·87	13	9 55 42·38	8 40 5·2	140·72
14	8 10 52·81	18 21 25·5	102·93	14	9 57 52·48	8 26 0·9	141·23
15	8 13 10·97	18 11 7·9	104·03	15	10 0 2·48	8 11 53·5	141·70
16	8 15 28·93	18 0 43·7	105·08	16	10 2 12·37	7 57 43·3	142·20
17	8 17 46·69	17 50 13·2	106·15	17	10 4 22·17	7 43 30·1	142·68
18	8 20 4·23	17 39 36·3	107·20	18	10 6 31·87	7 29 14·2	143·10
19	8 22 21·57	17 28 53·1	108·23	19	10 8 41·49	7 14 55·6	143·55
20	8 24 38·71	17 18 3·7	109·25	20	10 10 51·01	7 0 34·3	144·07
21	8 26 55·64	17 7 8·2	110·26	21	10 13 0·46	6 46 10·5	144·38
22	8 29 12·37	16 56 6·7	111·27	22	10 15 9·83	6 31 44·2	144·78
23	8 31 28·51	16 45 59·1	112·25	23	10 17 19·13	6 17 15·5	145·17

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. D for 10 ^m
FRIDAY 25.				SUNDAY 27.			
	h m s	N. ° ' "	"		h m s	S. ° ' "	"
0	10 19 28.35	N. 6 2 44.5	145.53	0	12 2 52.68	S. 5 53 13.1	147.5
1	10 21 37.51	5 48 11.3	145.53	1	12 5 3.69	6 7 58.1	147.7
2	10 23 46.60	5 33 35.8	146.25	2	12 7 14.91	6 22 41.2	146.1
3	10 25 55.64	5 18 58.3	146.58	3	12 9 26.28	6 37 22.4	146.1
4	10 28 4.62	5 4 18.8	146.90	4	12 11 37.80	6 52 1.6	146.1
5	10 30 13.56	4 49 37.4	147.20	5	12 13 49.48	7 6 38.7	145.1
6	10 32 22.45	4 34 54.2	147.52	6	12 16 1.32	7 21 13.5	145.4
7	10 34 31.29	4 20 9.1	147.78	7	12 18 13.32	7 35 46.1	145.9
8	10 36 40.10	4 5 22.4	148.05	8	12 20 25.50	7 50 16.3	144.4
9	10 38 48.88	3 50 34.1	148.32	9	12 22 37.84	8 4 44.1	144.9
10	10 40 57.63	3 35 44.2	148.55	10	12 24 50.57	8 19 9.3	143.7
11	10 43 6.36	3 20 52.9	148.78	11	12 27 3.07	8 33 31.9	143.9
12	10 45 15.06	3 6 0.2	149.00	12	12 29 15.96	8 47 51.7	142.5
13	10 47 23.75	2 51 6.2	149.20	13	12 31 29.03	9 2 8.7	142.5
14	10 49 32.43	2 36 11.0	149.38	14	12 33 42.29	9 16 22.8	141.5
15	10 51 41.11	2 21 14.7	149.55	15	12 35 55.74	9 30 33.9	141.3
16	10 53 49.78	2 6 17.4	149.72	16	12 38 9.39	9 44 41.8	140.3
17	10 55 58.45	1 51 19.1	149.87	17	12 40 23.24	9 58 46.6	140.3
18	10 58 7.13	1 36 19.9	150.00	18	12 42 37.30	10 12 48.1	139.4
19	11 0 15.83	1 21 19.9	150.12	19	12 44 51.55	10 26 46.2	139.1
20	11 2 24.53	1 6 19.2	150.23	20	12 47 6.02	10 40 40.9	138.3
21	11 4 33.26	0 51 17.8	150.32	21	12 49 20.70	10 54 31.9	137.2
22	11 6 42.01	0 36 15.9	150.38	22	12 51 35.60	11 8 19.4	137.2
23	11 8 50.79	N. 0 21 13.6	150.47	23	12 53 50.71	S. 11 22 3.1	136.4
SATURDAY 26.				MONDAY 28.			
	h m s	N. ° ' "	"		h m s	S. ° ' "	"
0	11 10 59.60	N. 0 6 10.8	150.52	0	12 56 6.03	S. 11 35 42.9	135.9
1	11 13 8.45	S. 0 8 52.3	150.53	1	12 58 21.61	11 49 18.8	135.2
2	11 15 17.35	0 23 55.5	150.57	2	13 0 37.39	12 2 50.7	134.6
3	11 17 26.29	0 38 58.9	150.58	3	13 2 53.40	12 16 18.5	133.9
4	11 19 35.28	0 54 2.4	150.58	4	13 5 9.64	12 29 42.0	133.2
5	11 21 44.33	1 9 5.9	150.55	5	13 7 26.12	12 43 1.3	132.4
6	11 23 53.43	1 24 9.2	150.52	6	13 9 42.83	12 56 16.1	131.7
7	11 26 2.61	1 39 12.3	150.48	7	13 11 59.78	13 9 26.5	130.9
8	11 28 11.85	1 54 15.2	150.42	8	13 14 16.97	13 22 32.2	130.1
9	11 30 21.16	2 9 17.7	150.33	9	13 16 34.40	13 35 33.3	129.2
10	11 32 30.55	2 24 19.7	150.25	10	13 18 52.07	13 48 29.6	128.4
11	11 34 40.03	2 39 21.2	150.15	11	13 21 9.99	14 1 21.1	127.7
12	11 36 49.58	2 54 22.1	150.03	12	13 23 28.16	14 14 7.6	126.9
13	11 38 59.23	3 9 22.3	149.90	13	13 25 46.58	14 26 49.0	126.0
14	11 41 8.98	3 24 21.7	149.75	14	13 28 5.25	14 39 25.3	125.1
15	11 43 18.83	3 39 20.2	149.60	15	13 30 24.17	14 51 56.4	124.2
16	11 45 28.78	3 54 17.8	149.42	16	13 32 43.34	15 4 22.1	123.3
17	11 47 38.83	4 9 14.3	149.22	17	13 35 2.77	15 16 42.4	122.4
18	11 49 49.01	4 24 9.6	149.03	18	13 37 22.45	15 28 57.2	121.5
19	11 51 59.29	4 39 3.8	148.80	19	13 39 42.38	15 41 6.4	120.6
20	11 54 9.70	4 53 56.6	148.57	20	13 42 2.58	15 53 9.9	119.7
21	11 56 20.23	5 8 48.0	148.33	21	13 44 23.03	16 5	118.8
22	11 58 30.90	5 23 38.0	148.07	22	13 46 43.74	16 16	117.9
23	12 0 41.69	5 38 26.4	147.78	23	13 49 4.71	16 28	117.0
24	12 2 52.62	S. 5 53 13.1		24	13 51 25.93	S. 16 40	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
TUESDAY 29.				WEDNESDAY 30.			
0	^h 13 ^m 51 ^s 25·93	S. 16° 40' 25·3	115·63	0	^h 14 ^m 49 ^s 11·06	S. 20° 46' 22·4	86·88
1	13 53 47·42	16 51 59·1	114·58	1	14 51 38·42	20 55 3·5	85·48
2	13 56 9·16	17 3 26·6	113·53	2	14 54 5·99	21 3 36·4	84·12
3	13 58 31·16	17 14 47·8	112·47	3	14 56 33·78	21 12 1·1	82·72
4	14 0 53·48	17 26 2·6	111·38	4	14 59 1·77	21 20 17·4	81·33
5	14 3 15·93	17 37 10·9	110·28	5	15 1 29·97	21 28 25·4	79·93
6	14 5 38·70	17 48 12·6	109·18	6	15 3 58·37	21 36 25·0	78·52
7	14 8 1·73	17 59 7·7	108·05	7	15 6 26·97	21 44 16·1	77·10
8	14 10 25·02	18 9 56·0	106·90	8	15 8 55·73	21 51 58·7	75·65
9	14 12 48·56	18 20 37·4	105·77	9	15 11 24·73	21 59 32·6	74·22
10	14 15 12·35	18 31 12·0	104·68	10	15 13 53·88	22 6 57·9	72·78
11	14 17 36·39	18 41 39·5	103·40	11	15 16 23·22	22 14 14·4	71·28
12	14 20 0·68	18 51 59·9	102·20	12	15 18 52·72	22 21 22·1	69·82
13	14 22 25·22	19 2 13·1	101·00	13	15 21 22·39	22 28 21·0	68·32
14	14 24 50·01	19 12 19·1	99·77	14	15 23 52·23	22 35 10·9	66·82
15	14 27 15·05	19 22 17·7	98·52	15	15 26 22·22	22 41 51·9	65·28
16	14 29 40·33	19 32 8·9	97·30	16	15 28 52·36	22 48 23·9	63·82
17	14 32 5·85	19 41 52·7	96·02	17	15 31 22·65	22 54 46·9	62·30
18	14 34 31·61	19 51 28·8	94·75	18	15 33 53·07	23 1 6·7	60·78
19	14 36 57·61	20 0 57·3	93·47	19	15 36 23·63	23 7 5·4	59·27
20	14 39 23·85	20 10 18·1	92·15	20	15 38 54·32	23 13 1·0	57·72
21	14 41 50·31	20 19 31·0	90·85	21	15 41 25·13	23 18 47·3	56·17
22	14 44 17·00	20 28 36·1	89·53	22	15 43 56·05	23 24 24·3	54·63
23	14 46 43·92	20 37 33·3	88·18	23	15 46 27·09	23 29 52·1	53·07
24	14 49 11·06	S. 20° 46' 22·4		24	15 48 58·22	S. 23° 35' 10·5	

PHASES OF THE MOON.

● New Moon	- - - - -	^d 2 ^h 4 ^m 7·7
☾ First Quarter	- - - - -	9 13 14·9
○ Full Moon	- - - - -	17 15 29·0
☾ Last Quarter	- - - - -	24 20 59·2

☾ Apogee	- - - - -	^d 11 ^h 22
☾ Perigee	- - - - -	27 16

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Noon.			P.L. of diff.			III ^h .			P.L. of diff.			VI ^h .			P.L. of diff.			IX ^h .			P.L. of diff.
			°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	
4	SUN	W.	24	30	45	2757	26	6	9	2767	27	41	20	2778	29	16	17	2788	28	59	24	2798	28	
	Saturn	E.	34	10	13	2382	32	26	13	2399	30	42	37	2415	36	25	33	2430	34	10	42	2445	32	
	Jupiter	E.	41	34	39	2407	39	51	14	2424	38	8	13	2440	36	25	33	2455	34	10	42	2470	32	
	α Aquilæ	E.	60	35	13	2103	59	7	7	2146	57	39	53	2198	56	13	26	2250	54	27	39	2305	52	
	Fomalhaut	E.	84	49	15	2784	83	14	26	2805	81	40	4	2824	80	6	7	2843	78	24	14	2862	76	
α Pegasi	E.	105	26	5	2512	103	45	9	2535	102	4	31	2540	100	24	14	2545	98	12	22	2550	96		
5	SUN	W.	37	6	42	2863	38	39	48	2880	40	12	33	2896	41	44	57	2910	39	37	66	2925	37	
	Jupiter	E.	27	58	27	2544	26	18	15	2561	24	38	27	2580	22	59	5	2600	20	40	14	2620	18	
	Fomalhaut	E.	72	23	37	2966	70	52	42	2993	69	22	21	3022	67	52	35	3051	65	42	28	3080	63	
	α Pegasi	E.	92	8	4	2636	90	29	58	2652	88	52	14	2671	87	14	55	2686	85	26	48	2701	83	
6	SUN	W.	49	21	27	3001	50	51	39	3018	52	21	29	3036	53	50	57	3054	51	49	66	3072	49	
	Fomalhaut	E.	60	33	17	3218	59	7	29	3255	57	42	25	3295	56	18	8	3334	54	9	17	3374	52	
	α Pegasi	E.	79	14	21	2781	77	39	28	2800	76	5	0	2820	74	30	58	2838	72	21	47	2856	70	
7	SUN	W.	61	12	56	3139	62	40	18	3156	64	7	20	3173	65	34	2	3190	63	28	11	3207	61	
	Venus	W.	19	28	31	3038	20	57	57	3048	22	27	11	3058	23	56	12	3068	21	45	23	3078	19	
	Fomalhaut	E.	49	29	19	2678	48	10	21	2686	46	52	25	2697	45	35	35	2707	43	26	44	2717	41	
	α Pegasi	E.	66	47	2	2938	65	15	31	2958	63	44	25	2978	62	13	44	2998	60	2	53	3018	58	
	α Arietis	E.	109	12	24	2784	107	37	35	2800	106	3	7	2814	104	28	57	2834	102	18	10	2854	100	
8	SUN	W.	72	42	54	3264	74	7	48	3277	75	32	26	3291	76	56	48	3304	74	50	57	3318	72	
	Venus	W.	31	17	53	3125	32	45	32	3137	34	12	57	3147	35	40	10	3154	33	28	20	3161	31	
	α Pegasi	E.	54	46	49	3104	53	18	44	3127	51	51	7	3148	50	23	36	3179	48	13	45	3210	46	
	α Arietis	E.	96	42	53	2899	95	10	33	2912	93	38	29	2924	92	6	41	2937	90	24	50	2950	88	
	SUN	W.	83	55	0	3364	85	17	58	3373	86	40	45	3383	88	3	21	3395	86	10	30	3407	84	
9	Venus	W.	42	53	6	3207	44	19	7	3215	45	44	58	3223	47	10	40	3231	45	2	49	3239	43	
	Saturn	W.	20	14	18	3005	21	44	25	3014	23	14	20	3023	24	44	4	3032	22	36	13	3041	20	
	Jupiter	W.	22	27	6	3036	23	56	34	3045	25	25	51	3055	26	54	56	3064	24	46	65	3073	22	
	α Pegasi	E.	43	15	18	3301	41	51	8	3320	40	27	31	3363	39	4	32	3394	37	16	41	3425	35	
	α Arietis	E.	84	31	24	2991	83	1	0	3001	81	30	49	3011	80	0	50	3015	78	11	59	3025	76	
	SUN	W.	94	53	48	3433	96	15	27	3439	97	37	0	3444	98	58	27	3451	96	49	36	3458	94	
	Venus	W.	54	17	5	3262	55	42	1	3267	57	6	51	3271	58	31	36	3275	56	20	45	3279	54	
10	Saturn	W.	42	10	11	3069	43	38	58	3075	45	7	38	3080	46	36	12	3084	44	25	27	3088	42	
	Jupiter	W.	34	17	52	3100	35	46	2	3106	37	14	4	3111	38	42	0	3116	36	30	9	3121	34	
	α Arietis	E.	72	33	26	3058	71	4	25	3063	69	35	30	3069	68	6	43	3074	66	18	52	3079	64	
	Aldebaran	E.	105	12	18	3087	103	43	53	3093	102	15	35	3098	100	47	23	3103	98	38	32	3108	96	
	SUN	W.	105	44	18	3470	107	5	16	3471	108	26	13	3473	109	47	7	3475	107	38	16	3477	105	
	Venus	W.	65	34	28	3287	66	58	55	3287	68	23	22	3288	69	47	47	3289	67	36	56	3290	65	
	Saturn	W.	53	57	41	3102	55	25	48	3105	56	53	51	3106	58	21	53	3107	56	10	62	3108	54	
11	Jupiter	W.	46	0	21	3134	47	27	49	3136	48	55	15	3138	50	22	39	3138	48	10	48	3139	46	
	α Arietis	E.	60	44	15	3094	59	15	58	3098	57	47	46	3100	56	19	36	3100	54	8	45	3101	52	
	Aldebaran	E.	93	27	32	3118	91	59	44	3119	90	31	58	3122	89	4	15	3122	87	16	44	3123	85	
	SUN	W.	116	31	25	3475	117	52	17	3472	119	13	12	3471	120	34	9	3469	118	25	26	3468	116	
	Venus	W.	76	50	10	3280	78	14	45	3277	79	39	23	3274	81	4	5	3271	79	17	42	3268	77	
	Saturn	W.	65	41	52	3106	67	9	54	3105	68	37	58	3103	70	6	4	3101	68	19	43	3099	66	
12	Jupiter	W.	57	39	29	3138	59	6	53	3136	60	34	19	3134	62	1	47	3132	60	11	46	3130	58	
	α Aquilæ	W.	50	38	53	4032	51	50	1	3993	53	1	48	3954	54	14	13	3919	52	3	12	3884	50	
	SUN	W.	121	11	11	3600	122	11	11	3600	123	11	11	3600	124	11	11	3600	125	11	11	3600	126	

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.	Midnight.	P. L. of diff.	XV ^b .			P. L. of diff.	XVIII ^b .			P. L. of diff.	XXI ^b .			P. L. of diff.
			°	'	"		°	'	"		°	'	"	
SUN W.	30 50 58	2802	32	25	23	2817	33	59	28	2832	35	33	15	2847
Saturn E.	27 16 35	2449	25	34	10	2466	23	52	9	2484	22	10	33	2601
Jupiter E.	34 43 20	2474	33	1	30	2491	31	20	4	2509	29	39	3	2527
α Aquilæ E.	54 48 17	3296	53	24	1	3352	52	0	50	3414	50	38	49	3479
Fomalhaut E.	78 32 38	2867	76	59	37	2891	75	27	6	2915	73	55	6	2939
α Pegasi E.	98 44 17	2570	97	4	41	2585	95	25	26	2602	93	46	34	2618
SUN W.	43 16 59	2930	44	48	40	2948	46	19	58	2966	47	50	53	2983
Jupiter E.	21 20 8	2616	19	41	35	2636	18	3	28	2654	16	25	46	2672
Fomalhaut E.	66 23 25	3082	64	54	54	3114	63	27	1	3147	61	59	48	3182
α Pegasi E.	85 37 59	2707	84	1	28	2785	82	25	21	2744	80	49	39	2762
SUN W.	55 20 3	3071	56	48	48	3088	58	17	12	3106	59	45	14	3123
Fomalhaut E.	54 54 38	3279	53	31	58	3285	52	10	10	3274	50	49	17	3224
α Pegasi E.	72 57 20	2889	71	24	8	2878	69	51	21	2898	68	18	59	2917
SUN W.	67 0 25	3204	68	26	29	3220	69	52	15	3235	71	17	43	3249
Venus W.	25 25 0	3080	26	53	34	3091	28	21	54	3102	29	50	1	3115
Fomalhaut E.	44 19 53	3332	43	5	24	3309	41	52	13	3390	40	40	23	3479
α Pegasi E.	60 43 29	3019	59	13	40	3040	57	44	17	3061	56	15	20	3082
α Arietis E.	102 55 8	2844	101	21	37	2889	99	48	25	2872	98	15	30	2886
SUN W.	78 20 55	3318	79	44	46	3329	81	8	24	3340	82	31	49	3352
Venus W.	37 7 9	3168	38	33	56	3179	40	0	30	3188	41	26	54	3198
α Pegasi E.	48 57 14	3196	47	31	0	3220	46	5	15	3247	44	40	1	3273
α Arietis E.	90 35 9	2949	89	3	52	2960	87	32	49	2971	86	2	0	2981
SUN W.	89 25 45	3402	90	47	59	3409	92	10	5	3418	93	32	1	3426
Venus W.	48 36 13	3238	50	1	37	3244	51	26	54	3251	52	52	3	3257
Saturn W.	36 13 36	3040	37	42	59	3048	39	12	12	3066	40	41	13	3062
Jupiter W.	28 23 50	3072	29	52	34	3079	31	21	9	3087	32	49	35	3094
α Pegasi E.	37 42 10	3481	36	20	28	3471	34	59	31	3513	33	39	21	3559
α Arietis E.	78 31 1	3028	77	1	23	3086	75	31	55	3043	74	2	36	3051
SUN W.	100 19 46	3455	101	41	1	3489	103	2	11	3463	104	23	16	3466
Venus W.	59 56 17	3278	61	20	54	3281	62	45	28	3283	64	9	59	3295
Saturn W.	48 4 39	3089	49	33	2	3094	51	1	19	3097	52	29	32	3101
Jupiter W.	40 9 50	3120	41	37	35	3124	43	5	15	3128	44	32	50	3132
α Arietis E.	66 38 2	3080	65	9	28	3084	63	40	59	3087	62	12	34	3092
Aldebaran E.	99 19 16	3106	97	51	14	3110	96	23	16	3113	94	35	22	3116
SUN W.	111 7 59	3476	112	28	50	3475	113	49	42	3476	115	10	33	3475
Venus W.	71 12 13	3287	72	36	40	3286	74	1	8	3284	75	25	38	3282
Saturn W.	59 49 54	3109	61	17	53	3109	62	45	52	3108	64	13	52	3108
Jupiter W.	51 50 2	3189	53	17	24	3140	54	44	45	3189	56	12	7	3129
α Arietis E.	54 51 29	3103	53	23	23	3105	51	55	19	3106	50	27	17	3106
Aldebaran E.	87 36 33	3124	86	8	51	3124	84	41	10	3124	83	13	29	3123
SUN W.	121 55 8	3466	123	16	10	3462	124	37	17	3459	125	58	27	3455
Venus W.	82 28 51	3265	83	53	43	3262	85	18	39	3256	86	43	42	3251
Saturn W.	71 34 13	3097	73	2	26	3095	74	30	42	3091	75	59	3	3087
Jupiter W.	63 29 18	3129	64	56	53	3126	66	24	31	3123	67	52	13	3118
α Aquilæ W.	55 27 13	3282	56	40	47	3286	57	54	51	3282	59	9	26	3299

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.	P. L. of diff.	III ^h .	P. L. of diff.	VI ^h .	P. L. of diff.	IX ^h .	P. L. of diff.
12	Aldebaran E.	81° 45' 47"	3123	80° 18' 5"	3121	78° 50' 21"	3119	77° 22' 35"	3117
13	SUN W.	127 19 41	3452	128 40 59	3447	130 2 23	3441	131 23 53	3436
	Venus W.	88 8 51	3245	89 34 7	3240	90 59 29	3232	92 25 0	3225
	Saturn W.	77 27 28	3083	78 55 59	3078	80 24 36	3074	81 53 18	3069
	Jupiter W.	69 20 1	3115	70 47 53	3109	72 15 52	3103	73 43 56	3098
	α Aquilæ W.	60 24 29	3772	61 40 0	3748	62 55 56	3725	64 12 17	3702
	α Arietis E.	37 14 47	3102	35 46 40	3101	34 18 31	3101	32 50 22	3101
	Aldebaran E.	70 3 5	3104	68 35 0	3100	67 6 50	3096	65 38 36	3095
	Pollux E.	111 57 11	3091	110 28 50	3087	109 0 24	3080	107 31 50	3077
14	Venus W.	99 34 41	3187	101 1 6	3178	102 27 41	3169	103 54 27	3161
	Saturn W.	89 18 39	3086	90 48 7	3028	92 17 45	3022	93 47 31	3019
	Jupiter W.	81 6 4	3067	82 34 54	3061	84 3 52	3052	85 33 0	3044
	α Aquilæ W.	70 39 42	3603	71 58 13	3586	73 17 3	3569	74 36 11	3552
	Fomalhaut W.	46 0 47	3892	47 14 15	3843	48 28 34	3796	49 43 40	3752
	Aldebaran E.	58 16 8	3069	56 47 21	3065	55 18 28	3060	53 49 29	3056
	Pollux E.	100 7 3	3040	98 37 40	3033	97 8 8	3025	95 38 26	3018
15	Saturn W.	101 18 51	2972	102 49 39	2963	104 20 38	2954	105 51 49	2946
	Jupiter W.	93 1 6	3003	94 31 15	2994	96 1 35	2985	97 32 6	2977
	α Aquilæ W.	81 16 4	3481	82 36 50	3469	83 57 49	3456	85 19 2	3444
	Fomalhaut W.	56 9 37	3574	57 28 40	3545	58 48 15	3516	60 8 22	3488
	α Pegasi W.	33 29 14	3482	34 50 54	3386	36 13 26	3345	37 36 45	3307
	Aldebaran E.	46 23 7	3032	44 53 34	3028	43 23 56	3025	41 54 14	3022
	Pollux E.	88 7 28	2976	86 36 45	2966	85 5 50	2958	83 34 45	2951
16	Jupiter W.	105 7 39	2928	106 39 22	2918	108 11 18	2909	109 43 26	2901
	α Aquilæ W.	92 8 11	3395	93 30 33	3387	94 53 4	3380	96 15 43	3372
	Fomalhaut W.	66 56 5	3371	68 18 55	3350	69 42 9	3331	71 5 45	3312
	α Pegasi W.	44 43 17	3157	46 10 18	3132	47 37 49	3109	49 5 47	3087
	Aldebaran E.	34 25 10	3021	32 55 23	3025	31 25 41	3031	29 56 6	3032
	Pollux E.	75 56 27	2904	74 24 13	2894	72 51 47	2885	71 19 9	2877
17	Fomalhaut W.	78 8 57	3229	79 34 32	3214	81 0 24	3201	82 26 32	3188
	α Pegasi W.	56 32 3	2990	58 2 28	2973	59 33 14	2957	61 4 20	2941
	α Arietis W.	12 59 52	3185	14 27 19	3058	15 56 20	2998	17 26 35	2950
	Pollux E.	63 33 6	2882	61 59 19	2823	60 25 21	2814	58 51 11	2804
	Regulus E.	100 21 43	2796	98 47 10	2787	97 12 25	2777	95 37 27	2768
18	Fomalhaut W.	89 40 52	3183	91 8 22	3123	92 36 4	3118	94 3 55	3105
	α Pegasi W.	68 44 40	2869	70 17 38	2858	71 50 51	2848	73 24 21	2838
	α Arietis W.	25 10 0	2803	26 44 24	2783	28 19 14	2766	29 54 27	2751
	Pollux E.	50 57 51	2769	49 22 42	2762	47 47 24	2757	46 11 59	2751
	Regulus E.	87 39 17	2718	86 3 1	2708	84 26 32	2699	82 49 50	2691
19	α Pegasi W.	81 15 38	2778	82 50 35	2767	84 25 46	2758	86 1 9	2750
	α Arietis W.	37 55 41	2678	39 32 50	2667	41 10 14	2658	42 47 55	2644
	Pollux E.	38 13 17	2733	36 37 21	2732	35 1 23	2732	33 25 26	2731
	Regulus E.	74 43 15	2644	73 5 20	2635	71 27 13	2627	69 48 55	2611
	Mars E.	113 47 58	2873	112 15 4	2862	110 41 56	2852	109 8 36	2844
20	α Pegasi W.	94 1 1	2708	95 37 31	2700	97 14 11	2693	98 51 1	2686
	α Arietis W.	50 59 54	2502	52 38 50	2494	54 12 16	2487	55 27 46	2480

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.	P. L. of diff.	XV ^h .	P. L. of diff.	XVIII ^h .	P. L. of diff.	XXI ^h .	P. L. of diff.
		° ' "		° ' "		° ' "		° ' "	
12	Aldebaran E.	75 54 47	3115	74 26 56	3114	72 59 8	3110	71 31 5 8	
13	SUN W.	132 45 29	3431	134 7 11	3425	135 28 39	3419	136 50 54	3
	Venus W.	93 50 38	3218	95 16 26	3212	96 42 21	3204	98 8 26	3
	Saturn W.	83 22 8	3062	84 51 4	3056	86 20 8	3050	87 49 19	3
	Jupiter W.	75 12 7	3098	76 40 25	3087	78 8 50	3081	79 37 23	3
	α Aquilæ W.	65 29 2	2690	66 46 10	2660	68 3 40	2640	69 21 31	3
	α Arietis E.	31 22 12	3100	29 54 2	3101	28 25 54	3102	26 57 47	3
	Aldebaran E.	64 10 17	3088	62 41 53	3088	61 13 23	3079	59 44 48	3
	Pollux E.	106 3 8	3068	104 34 19	3061	103 5 22	3055	101 36 17	3
14	Venus W.	105 21 23	3151	106 48 31	3142	108 15 50	3131	109 43 22	3
	Saturn W.	95 17 27	3006	96 47 32	2998	98 17 48	2989	99 48 14	2
	Jupiter W.	87 2 17	3027	88 31 44	3029	90 1 21	3021	91 31 8	3
	α Aquilæ W.	75 55 37	3527	77 15 20	3523	78 35 19	3509	79 55 34	3
	Fomalhaut W.	50 59 31	3713	52 16 4	3675	53 33 18	3640	54 51 9	3
	Aldebaran E.	52 20 24	3050	50 51 13	3046	49 21 57	3040	47 52 34	3
	Pollux E.	94 8 35	3010	92 38 34	3001	91 8 22	2993	89 38 0	2
15	Saturn W.	107 23 11	2985	108 54 45	2926	110 26 31	2917	111 58 28	2
	Jupiter W.	99 2 49	2967	100 33 43	2967	102 4 50	2948	103 36 8	2
	α Aquilæ W.	86 40 28	3433	88 2 7	3423	89 23 57	3413	90 45 59	3
	Fomalhaut W.	61 29 0	3463	62 50 5	3438	64 11 39	3415	65 33 39	3
	α Pegasi W.	39 0 48	3273	40 25 31	3241	41 50 52	3211	43 16 48	3
	Aldebaran E.	40 24 28	3020	38 54 40	3018	37 24 50	3018	35 55 0	3
	Pollux E.	82 3 28	2940	80 32 0	2931	79 0 21	2922	77 28 30	2
16	Jupiter W.	111 15 46	2888	112 48 20	2879	114 21 6	2868	115 54 6	2
	α Aquilæ W.	97 38 31	3367	99 1 25	3361	100 24 26	3358	101 47 31	3
	Fomalhaut W.	72 29 43	3294	73 54 2	3277	75 18 41	3259	76 43 40	3
	α Pegasi W.	50 34 13	3066	52 3 4	3045	53 32 21	3026	55 2 1	3
	Aldebaran E.	28 26 42	3051	26 57 32	3066	25 28 41	3087	24 0 15	3
	Pollux E.	69 46 20	2867	68 13 19	2858	66 40 6	2849	65 6 41	2
17	Fomalhaut W.	83 52 56	3175	85 19 35	3164	86 46 27	3153	88 13 33	3
	α Pegasi W.	62 35 47	2926	64 7 33	2912	65 39 37	2897	67 12 0	2
	α Arietis W.	18 57 50	2911	20 29 55	2878	22 2 42	2850	23 36 5	2
	Pollux E.	57 16 51	2798	55 42 21	2791	54 7 41	2782	52 32 50	2
	Regulus E.	94 2 15	2756	92 26 50	2747	90 51 12	2737	89 15 21	2
18	Fomalhaut W.	95 31 56	3101	97 0 5	3094	98 28 22	3088	99 56 46	3
	α Pegasi W.	74 58 7	2821	76 32 8	2809	78 6 24	2798	79 40 54	2
	α Arietis W.	31 30 3	2733	33 5 59	2718	34 42 15	2705	36 18 49	2
	Pollux E.	44 36 26	2746	43 0 47	2741	41 25 1	2738	39 49 11	2
	Regulus E.	81 12 56	2680	79 35 49	2671	77 58 30	2662	76 20 59	2
19	α Pegasi W.	87 36 45	2740	89 12 32	2731	90 48 31	2723	92 24 41	2
	α Arietis W.	44 25 50	2638	46 4 0	2622	47 42 25	2612	49 21 3	2
	Pollux E.	31 49 32	2738	30 13 43	2745	28 38 3	2753	27 2 34	2
	Regulus E.	68 10 25	2610	66 31 44	2602	64 59 52	2594	63 13 49	2
	Mars E.	107 35 3	2823	106 1 18	2824	104 27 21	2814	102 53 11	2
20	α Pegasi W.	100 27 59	2681	102 5 5	2675	103 42 19	2669	105 19 41	2
	α Arietis W.	57 37 28	2557	59 17 22	2548	60 57 28	2540	62 37 45	2

MEAN TIME.
LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.			P. L. of diff.			III ^h .			P. L. of diff.			VI ^h .			P. L. of diff.			IX ^h .			P. L. of diff.			
		°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	
20	Aldebaran W.	19	41	53	2980	21	12	31	2914	22	44	32	2859	24	17	43	2818	25	17	43	2818	25	17	43	2818	
	Pollux E.	25	27	22	2784	23	52	33	2807	22	18	14	2837	20	44	34	2818	20	44	34	2818	20	44	34	2818	
	Regulus E.	61	34	35	2578	59	55	10	2572	58	15	36	2564	56	35	51	2564	56	35	51	2564	56	35	51	2564	
	Mars E.	101	18	50	2797	99	44	18	2788	98	9	34	2779	96	34	39	2779	96	34	39	2779	96	34	39	2779	
21	α Arietis W.	64	18	13	2524	65	58	53	2517	67	39	43	2508	69	20	45	2508	69	20	45	2508	69	20	45	2508	
	Aldebaran W.	32	16	0	2663	33	53	29	2643	35	31	26	2624	37	9	48	2624	37	9	48	2624	37	9	48	2624	
	Regulus E.	48	14	42	2523	46	34	1	2517	44	53	12	2512	43	12	13	2512	43	12	13	2512	43	12	13	2512	
	Mars E.	88	37	22	2732	87	1	24	2724	85	25	16	2717	83	48	58	2717	83	48	58	2717	83	48	58	2717	
	Spica ♀ E.	102	14	44	2509	100	33	43	2502	98	52	32	2495	97	11	11	2495	97	11	11	2495	97	11	11	2495	
	SUN E.	139	24	26	2862	137	51	18	2852	136	17	57	2843	134	44	25	2843	134	44	25	2843	134	44	25	2843	
22	α Arietis W.	77	48	25	2465	79	30	27	2458	81	12	39	2452	82	54	59	2452	82	54	59	2452	82	54	59	2452	
	Aldebaran W.	45	27	2	2537	47	7	24	2526	48	48	1	2515	50	28	54	2515	50	28	54	2515	50	28	54	2515	
	Regulus E.	34	45	41	2494	33	4	5	2480	31	22	24	2478	29	40	40	2478	29	40	40	2478	29	40	40	2478	
	Mars E.	75	45	6	2678	74	7	53	2669	72	30	31	2662	70	53	1	2662	70	53	1	2662	70	53	1	2662	
	Spica ♀ E.	88	41	56	2453	86	59	37	2446	85	17	8	2440	83	34	30	2440	83	34	30	2440	83	34	30	2440	
	SUN E.	126	54	2	2794	125	19	26	2786	123	44	40	2779	122	9	44	2779	122	9	44	2779	122	9	44	2779	
23	α Arietis W.	91	29	1	2415	93	12	15	2408	94	55	39	2402	96	29	10	2402	96	29	10	2402	96	29	10	2402	
	Aldebaran W.	58	56	40	2459	60	38	51	2450	62	21	14	2442	64	3	47	2442	64	3	47	2442	64	3	47	2442	
	Pollux W.	17	51	3	2786	19	25	49	2719	21	2	4	2665	22	39	31	2665	22	39	31	2665	22	39	31	2665	
	Mars E.	62	43	29	2629	61	5	13	2623	59	26	49	2618	57	48	18	2618	57	48	18	2618	57	48	18	2618	
	Spica ♀ E.	74	59	7	2403	73	15	37	2396	71	31	57	2391	69	48	16	2391	69	48	16	2391	69	48	16	2391	
	SUN E.	114	12	42	2735	112	36	49	2729	111	0	48	2722	109	24	38	2722	109	24	38	2722	109	24	38	2722	
24	Aldebaran W.	72	39	11	2400	74	22	46	2394	76	6	29	2388	77	50	21	2388	77	50	21	2388	77	50	21	2388	
	Pollux W.	30	58	55	2485	32	40	30	2467	34	22	30	2450	36	4	53	2450	36	4	53	2450	36	4	53	2450	
	Mars E.	49	34	14	2593	47	55	9	2590	46	16	1	2587	44	36	48	2587	44	36	48	2587	44	36	48	2587	
	Spica ♀ E.	61	7	9	2358	59	22	34	2352	57	37	50	2348	55	53	0	2348	55	53	0	2348	55	53	0	2348	
	SUN E.	101	21	35	2624	99	44	33	2618	98	7	23	2612	96	30	5	2612	96	30	5	2612	96	30	5	2612	
	25	Aldebaran W.	86	31	49	2384	88	16	30	2379	90	1	18	2374	91	46	13	2374	91	46	13	2374	91	46	13	2374
Pollux W.		44	41	22	2380	46	25	26	2371	48	9	43	2362	49	54	13	2362	49	54	13	2362	49	54	13	2362	
Mars E.		36	20	16	2583	34	40	58	2586	33	1	44	2590	31	22	35	2590	31	22	35	2590	31	22	35	2590	
Spica ♀ E.		47	7	0	2319	45	21	28	2315	43	35	50	2311	41	50	7	2311	41	50	7	2311	41	50	7	2311	
SUN E.		88	21	36	2627	86	43	31	2622	85	5	20	2627	83	27	1	2627	83	27	1	2627	83	27	1	2627	
26		Pollux W.	58	39	19	2321	60	24	48	2315	62	10	25	2310	63	56	10	2310	63	56	10	2310	63	56	10	2310
	Regulus W.	21	39	26	2350	23	24	12	2335	25	9	20	2324	26	54	45	2324	26	54	45	2324	26	54	45	2324	
	Spica ♀ E.	33	0	16	2293	31	14	6	2292	29	27	55	2291	27	41	42	2291	27	41	42	2291	27	41	42	2291	
	SUN E.	75	13	48	2599	73	34	51	2595	71	55	49	2591	70	16	41	2591	70	16	41	2591	70	16	41	2591	
	27	Pollux W.	72	46	33	2285	74	32	54	2282	76	19	19	2280	78	5	48	2280	78	5	48	2280	78	5	48	2280
		Regulus W.	35	45	4	2277	37	31	37	2272	39	18	16	2268	41	5	2	2268	41	5	2	2268	41	5	2	2268
SUN E.		61	59	51	2572	60	20	17	2569	58	40	40	2568	57	1	1	2568	57	1	1	2568	57	1	1	2568	
28	Pollux W.	86	58	52	2272	88	45	32	2272	90	32	13	2272	92	18	53	2272	92	18	53	2272	92	18	53	2272	
	Regulus W.	49	59	55	2254	51	47	2	2253	53	34	10	2253	55	21	19	2253	55	21	19	2253	55	21	19	2253	
	SUN E.	48	42	19	2562	47	2	33	2564	45	22	42	2565	43	43	5	2565	43	43	5	2565	43	43	5	2565	
29	Regulus W.	64	16	51	2260	66	3	50	2262	67	50	46	2265	69	37	37	2265	69	37	37	2265	69	37	37	2265	
	Spica ♀ W.	10	30	25	2412	12	13	42	2372	13	57	55	2348	15	42	44	2348	15	42	44	2348	15	42	44	2348	
	SUN E.	35	25	9	2580	33	45	46	2582	32	6	30	2591	30	27		2591	30	27		2591	30	27		2591	

MEAN TIME.

LUNAR DISTANCES.

the Month.	Star's Name and Position.	Midnight.	P.L. of diff.	XV ^h .			P.L. of diff.	XVIII ^h .			P.L. of diff.	XXI ^h .			P.L. of diff.
				°	'	"		°	'	"		°	'	"	
20	Aldebaran W.	25 51 53	2775	27	26	54	2742	29	2	38	2718	30	39	2	2606
	Pollux E.	19 11 46	2931	17	40	7	2006	16	10	1	3105	14	41	58	2248
	Regulus E.	54 55 56	2549	53	15	51	2543	51	35	37	2536	49	55	14	2530
	Mars E.	94 59 33	2763	93	24	16	2754	91	48	48	2747	90	13	10	2739
21	α Arietis W.	71 1 56	2493	73	43	19	2487	74	24	51	2489	76	6	33	2472
	Aldebaran W.	38 48 35	2591	40	27	42	2575	42	7	11	2562	43	46	58	2550
	Regulus E.	41 31 10	2500	39	49	57	2496	38	8	38	2491	36	27	12	2487
	Mars E.	82 12 30	2702	80	35	53	2695	78	59	6	2688	77	22	10	2682
	Spica ♀ E.	95 29 39	2480	93	47	58	2473	92	6	7	2466	90	24	6	2460
	SUN E.	133 10 42	2826	131	36	48	2818	130	2	43	2910	128	28	28	2802
22	α Arietis W.	84 37 29	2438	86	20	9	2423	88	2	57	2426	89	45	54	2419
	Aldebaran W.	52 10 0	2495	53	51	21	2485	55	32	55	2477	57	14	41	2467
	Regulus E.	27 58 54	2476	26	17	7	2477	24	35	22	2480	23	53	40	2485
	Mars E.	69 15 22	2659	67	37	35	2646	65	59	41	2639	64	21	39	2633
	Spica ♀ E.	81 51 44	2427	80	8	48	2421	78	25	44	2415	76	42	30	2408
	SUN E.	120 34 39	2764	118	59	24	2757	117	23	59	2750	115	48	25	2743
23	α Arietis W.	98 22 50	2390	100	6	39	2385	101	50	35	2380	103	34	39	2374
	Aldebaran W.	65 46 31	2428	67	29	26	2420	69	12	32	2414	70	55	47	2408
	Pollux W.	24 17 57	2584	25	57	14	2583	27	37	13	2522	29	17	48	2505
	Mars E.	56 9 41	2609	54	30	58	2604	52	52	9	2600	51	13	14	2596
	Spica ♀ E.	68 4 14	2380	66	20	10	2373	64	35	57	2369	62	51	37	2363
	SUN E.	107 48 18	2709	106	11	50	2703	104	35	14	2696	102	58	28	2690
24	Aldebaran W.	79 34 22	2375	81	18	32	2371	83	2	49	2364	84	47	15	2359
	Pollux W.	37 47 36	2423	39	30	38	2411	41	13	57	2400	42	57	32	2389
	Mars E.	42 57 33	2583	41	18	15	2582	39	38	56	2582	37	59	36	2582
	Spica ♀ E.	54 8 2	2337	52	22	57	2333	50	37	45	2328	48	52	26	2323
	SUN E.	94 52 39	2659	93	15	4	2654	91	37	22	2649	89	59	33	2643
25	Aldebaran W.	93 31 15	2335	95	16	23	2331	97	1	37	2326	98	46	58	2324
	Pollux W.	51 38 53	2346	53	23	45	2340	55	8	47	2333	56	53	58	2326
	Mars E.	29 43 33	2602	28	4	41	2613	26	26	3	2626	24	47	43	2642
	Spica ♀ E.	40 4 18	2304	38	18	24	2300	36	32	25	2298	34	46	22	2296
	SUN E.	81 48 36	2616	80	10	3	2612	78	31	25	2607	76	52	40	2602
26	Pollux W.	65 48 2	2300	67	28	1	2296	69	14	6	2292	71	0	17	2289
	Regulus W.	28 40 25	2304	30	26	19	2296	32	12	24	2289	33	58	40	2282
	Spica ♀ E.	25 55 29	2292	24	9	17	2294	22	23	9	2298	20	37	6	2303
	SUN E.	68 37 28	2523	66	58	10	2520	65	18	48	2577	63	29	21	2574
27	Pollux W.	79 52 20	2276	81	38	55	2274	83	25	33	2274	85	12	11	2272
	Regulus W.	42 51 52	2262	44	38	48	2260	46	25	47	2257	48	12	50	2256
	SUN E.	55 21 19	2564	53	41	35	2564	52	1	51	2563	50	22	5	2563
28	Pollux W.	94 5 31	2275	95	59	8	2276	97	38	43	2279	99	29	14	2281
	Regulus W.	57 8 28	2253	56	53	37	2255	60	42	43	2256	62	29	48	2257
	SUN E.	42 3 23	2567	40	23	43	2571	38	44	8	2573	37	4	36	2577
29	Regulus W.	71 24 23	2273	73	11	3	2277	74	57	37	2282	76	44	2	2287
	Spica ♀ W.	17 27 55	2284	19	13	20	2318	20	58	54	2315	22	44	32	2314
	SUN E.	28 48 23	2603	27	9	32	2611	25	30	52	2619	23	52	23	2629

CONFIGURATIONS OF THE SATELLITES OF JUPITER,

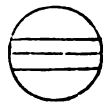
At 5^h 30^m, MEAN TIME.

Day of the Month.	West.	East.
1	.4	.1 O .2 3.
2	.4	3. O 3. O 1.
3	3. .4 2.	O .1
4	.3	1. 3 O
5		.3 O .1 .4 .2
6	2. O	.1 O .3 .4
7		.2 O 1. 3. .4
8		.1 O .2 3. .4
9		3. O 1. 2. .4
10	.1 ●	3. 2. O .4
11		.3 .2 1. O .4
12		.3 O .1 4. .2
13		1. 4. O 2. .3
14		4. .2 O 1. .3
15	4.	.1 O 3. .1
16	4.	O 1. 2. O 2.
17	.4	3. 2. .1 O
18	.4	.3 .2 O
19	.4	.3 O .1 .2
20		.4 1. O 2. .3
21		2. .4 O .1 .3
22	.2 ●	.1 O .4 3.
23		O 3. 1. 2. .4
24		3. .1 O .4
25	.3	.2 1 O .4
26	.1 ●	.3 O .2 .4
27		1. O .3 2. .4
28		2. O .1 .3 .4
29		.1 .2 O 4. 3.
30		4. O 3. 1. 2.

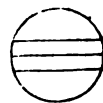
This Table represents, at 5^h 30^m after *Mean Noon* of each day of the month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (O) in the centre of the page; the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the disc of Jupiter. A white circle (O) at the left or right hand of the page, denotes that the Satellite is either *behind* or *in front of* Jupiter, and a black circle (●) that it is either *behind* or *in front of* Jupiter.

ECLIPSES OF THE SATELLITES OF JUPITER.

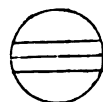
SATELLITE.	Day of the Month.	Mean Time.	Sidereal Time.	PHASE as seen in an inverting Telescope.
I.	1	h m s 11 32 38·7	h m s 2 15 59·5	Em.
	3*	6 1 30·6	20 51 50·1	Em.
	5	0 30 17·0	15 27 35·2	Em.
	6	18 59 6·2	10 3 23·1	Em.
	8	13 27 52·6	4 39 8·2	Em.
	10†	7 56 43·4	23 14 57·7	Em.
	12	2 25 28·9	17 50 41·9	Em.
	13	20 54 16·8	12 26 28·5	Em.
	15	15 23 2·1	7 2 12·5	Em.
	17	9 51 51·6	1 38 0·7	Em.
	19†	4 20 36·2	20 13 44·0	Em.
	20	22 49 22·8	14 49 29·3	Em.
	22	17 18 6·9	9 25 12·1	Em.
	24	11 46 55·2	4 0 59·1	Em.
	26†	6 15 38·7	22 36 41·3	Em.
	28	0 44 24·2	17 12 25·5	Em.
29	19 13 7·1	11 48 7·1	Em.	
II.	1	2 17 26·1	16 59 15·7	Em.
	4	15 36 24·4	6 32 14·9	Em.
	8†	4 54 51·2	20 4 42·5	Em.
	11	18 13 55·1	9 37 47·3	Em.
	15†	7 32 22·5	23 10 15·5	Em.
	18	20 51 31·6	12 43 25·6	Em.
	22	10 9 59·7	2 15 54·5	Em.
	25	23 29 13·2	15 49 9·1	Em.
	29	12 47 41·9	5 21 38·6	Em.
III.	5	13 38 5·4	4 37 33·0	Im.
	5	17 4 14·7	8 4 16·1	Em.
	12	17 38 19·3	9 6 2·3	Im.
	12	21 4 56·4	12 33 13·3	Em.
	19	21 38 43·0	13 34 41·4	Im.
	20	1 5 46·9	17 2 19·2	Em.
	27	1 39 8·8	18 3 22·5	Im.
	27*	5 6 38·2	21 31 26·1	Em.
IV.	4	22 24 3·3	13 21 0·7	Im.
	5	2 29 44·1	17 27 21·9	Em.
	21	16 30 53·2	8 33 54·1	Im.
	21	20 41 37·6	12 45 19·7	Em.



e *

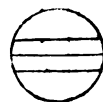


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APPROXIMATE SIDEREAL TIMES
OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER,
AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.		TRANSITS OF SATELLITES.				TRANSITS OF SHADOW.	
	Immersion.	Emersion.	Ingress.		Egress.		Ingress.	Egress.
	d h m	d h m	d h m	d h m	d h m	d h m	d h m	d h m
I.	1† 22 45		2† 19 57	2† 22 17	2* 21 10	2 23 1		
	3 17 22		3 14 34	4 16 53	4 15 46	4 18		
	4 11 58		5 9 11	5 11 30	5 10 22	5 12 4		
	6 6 35		7 3 47	7 6 7	7 4 58	7 7 1		
	8 1 12		9† 22 24	9 0 44	9 23 33	9 1 5		
	10† 19 49		11 17 1	11 19 21	11 18 9	11* 20 2		
	11 14 26	In	12 11 38	12 13 58	12 12 45	12 15		
	13 9 2		14 6 15	14 8 35	14 7 21	14 9 4		
	15 3 39	the	16 0 52	16 3 12	16 1 57	16 4 1		
	17† 22 16	Shadow.	18 19 29	18* 21 49	18† 20 32	18† 22 5		
	19 16 53		19 14 6	20 16 26	19 15 8	20 17 9		
	20 11 30		21 8 43	21 11 3	21 9 44	21 12 1		
	22 6 7		23 3 20	23 5 40	23 4 20	23 6 4		
	24 0 44		25* 21 57	25 0 17	25† 22 56	25 1 1		
	26 19 21		27 16 34	27 18 54	27 17 32	27 19 5		
27 13 58		28 11 12	28 13 31	28 12 7	28 14 2			
29 8 35		30 5 49	30 8 9	30 6 43	30 9 1			
II.	4 1 14		2 6 56	2 9 51	2 9 23	2 12 1		
	7 14 50		6* 20 32	6 23 27	6† 22 55	6 1 5		
	11 4 27		9 10 8	9 13 3	9 12 27	10 15 2		
	15 18 3	In the	13 23 44	13 2 39	13 1 59	13 4 5		
	18 7 41	Shadow.	16 13 21	17 16 16	16 15 31	17 18 2		
	22* 21 19		20 2 58	20 5 53	20 5 3	20 8 1		
	25 10 57		24 16 35	24 19 30	24 18 35	24* 21 3		
29 0 35		27 6 12	27 9 8	27 8 7	27 11 1			
III.	5 23 46	5 3 17	1 9 30	1 13 1	1 14 24	2 18 1		
	12 4 31	12 8 2	8 14 15	9 17 46	9 18 54	9† 22 34		
	19 9 18	19 12 51	16 19 1	16† 22 33	16† 23 23	16 8 5		
	26 14 8	27 17 42	23 23 51	23 3 24	23 3 52	23 7 2		
		30 4 42	30 8 15	30 8 20	30 11 5			
IV.	4 2 12	4 6 6	12 14 2	13 17 59	13 0 18	13 4 3		
	21† 23 1	21 3 2	29 11 7	29 15 11	30 19 32	30 23 3		

Day of the Month.	For correcting the Places of the Fixed Stars.				Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0 ^h .567309. Days.	From Mean Noon of January 1.	
	At Mean Midnight,						Day of the Year.	Fraction of the Year.
	A	B	C	D				
1	+1.1607	+1.1093	+0.0567	-0.4060	9 17 1.51	223	304	.832
2	1.1544	1.1185	0.0577	0.4014	9 13 5.60	224	305	.835
3	1.1478	1.1274	0.0587	0.3967	9 9 9.69	225	306	.838
4	+1.1411	+1.1359	+0.0598	-0.3920	9 5 13.78	226	307	.841
5	1.1341	1.1441	0.0608	0.3872	9 1 17.87	227	308	.843
6	1.1268	1.1521	0.0619	0.3823	8 57 21.97	228	309	.846
7	+1.1192	+1.1598	+0.0629	-0.3773	8 53 26.06	229	310	.849
8	1.1114	1.1672	0.0640	0.3723	8 49 30.15	230	311	.851
9	1.1033	1.1744	0.0651	0.3673	8 45 34.24	231	312	.854
10	+1.0949	+1.1814	+0.0662	-0.3622	8 41 38.33	232	313	.857
11	1.0862	1.1881	0.0673	0.3570	8 37 42.42	233	314	.860
12	1.0772	1.1945	0.0684	0.3518	8 33 46.50	234	315	.862
13	+1.0679	+1.2008	+0.0695	-0.3466	8 29 50.59	235	316	.865
14	1.0582	1.2068	0.0706	0.3413	8 25 54.68	236	317	.868
15	1.0481	1.2126	0.0717	0.3360	8 21 58.77	237	318	.871
16	+1.0377	+1.2182	+0.0728	-0.3306	8 18 2.86	238	319	.873
17	1.0269	1.2236	0.0740	0.3252	8 14 6.95	239	320	.876
18	1.0156	1.2288	0.0751	0.3199	8 10 11.04	240	321	.879
19	+1.0039	+1.2338	+0.0763	-0.3145	8 6 15.13	241	322	.882
20	0.9918	1.2387	0.0774	0.3090	8 2 19.22	242	323	.884
21	0.9791	1.2433	0.0786	0.3036	7 58 23.31	243	324	.887
22	+0.9659	+1.2477	+0.0798	-0.2982	7 54 27.40	244	325	.890
23	0.9522	1.2520	0.0810	0.2928	7 50 31.49	245	326	.893
24	0.9379	1.2561	0.0822	0.2874	7 46 35.58	246	327	.895
25	+0.9229	+1.2601	+0.0834	-0.2820	7 42 39.67	247	328	.898
26	0.9072	1.2638	0.0846	0.2767	7 38 43.75	248	329	.901
27	0.8908	1.2674	0.0858	0.2713	7 34 47.84	249	330	.903
28	+0.8736	+1.2709	+0.0870	-0.2660	7 30 51.93	250	331	.906
29	0.8556	1.2742	0.0882	0.2608	7 26 56.02	251	332	.909
30	0.8367	1.2773	0.0894	0.2556	7 23 0.11	252	333	.912
31	+0.8167	+1.2802	+0.0907	-0.2503	7 19 4.20	253	334	.914

AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S				Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, to be subtr. from added to Apparent Time.	Dif. for 1 hor.		
		Apparent Right Ascension.	Dif. for 1 hour.	Apparent Declination.	Dif. for 1 hour.					
		h m s	s	o ' "	"	m s	m s	s		
Thur.	1	16 28 53	46	10° 31'	S. 21 48 31	5	22° 9'	1 10 20	10 48 45	0 34
Frid.	2	16 33 13	07	10° 343	21 57 42	0	21° 88	1 10 28	10 25 45	0 39
Sat.	3	16 37 33	31	10° 368	22 6 27	2	20° 81	1 10 36	10 1 84	1 04
Sun.	4	16 41 54	15	10° 393	22 14 46	7	19° 73	1 10 44	9 37 62	1 03
Mon.	5	16 46 15	57	10° 915	22 22 40	2	18° 64	1 10 52	9 12 83	1 05
Tues.	6	16 50 37	52	10° 936	22 30 7	5	17° 54	1 10 59	8 47 51	1 07
Wed.	7	16 54 59	99	10° 956	22 37 8	5	16° 43	1 10 66	8 21 66	1 04
Thur.	8	16 59 22	94	10° 975	22 43 42	8	15° 31	1 10 72	7 55 35	1 15
Frid.	9	17 3 46	33	10° 993	22 49 50	2	14° 18	1 10 78	7 28 58	1 13
Sat.	10	17 8 10	15	11° 009	22 55 30	6	13° 05	1 10 84	7 1 40	1 14
Sun.	11	17 12 34	36	11° 024	23 0 43	8	11° 91	1 10 90	6 33 83	1 14
Mon.	12	17 16 58	93	11° 038	23 5 29	7	10° 76	1 10 95	6 5 88	1 17
Tues.	13	17 21 23	85	11° 050	23 9 48	0	9° 61	1 10 99	5 37 60	1 19
Wed.	14	17 25 49	06	11° 062	23 13 38	7	8° 46	1 11 03	5 9 02	1 20
Thur.	15	17 30 14	56	11° 072	23 17 1	7	7° 29	1 11 07	4 40 16	1 21
Frid.	16	17 34 40	29	11° 082	23 19 56	7	6° 13	1 11 10	4 11 07	1 22
Sat.	17	17 39 6	25	11° 090	23 22 23	7	4° 95	1 11 13	3 41 75	1 23
Sun.	18	17 43 32	39	11° 096	23 24 22	6	3° 78	1 11 15	3 12 25	1 23
Mon.	19	17 47 58	70	11° 101	23 25 53	4	2° 60	1 11 17	2 42 58	1 24
Tues.	20	17 52 25	13	11° 106	23 26 55	9	1° 43	1 11 18	2 12 79	1 24
Wed.	21	17 56 51	67	11° 109	23 27 30	2	0° 25	1 11 19	1 42 89	1 24
Thur.	22	18 1 18	28	11° 110	23 27 36	1	0° 93	1 11 20	1 12 92	1 24
Frid.	23	18 5 44	92	11° 110	23 27 13	7	2° 12	1 11 20	0 42 92	1 25
Sat.	24	18 10 11	57	11° 109	23 26 22	9	3° 30	1 11 19	0 12 90	1 24
Sun.	25	18 14 38	19	11° 107	23 25 3	8	4° 48	1 11 18	0 17 08	1 24
Mon.	26	18 19 4	75	11° 103	23 23 16	4	5° 65	1 11 17	0 46 99	1 24
Tues.	27	18 23 31	20	11° 096	23 21 0	7	6° 83	1 11 15	1 16 80	1 24
Wed.	28	18 27 57	51	11° 089	23 18 16	7	8° 00	1 11 12	1 46 47	1 23
Thur.	29	18 32 23	65	11° 081	23 15 4	7	9° 17	1 11 09	2 15 98	1 23
Frid.	30	18 36 49	59	11° 071	23 11 24	6	10° 33	1 11 06	2 45 28	1 21
Sat.	31	18 41 15	29	11° 058	23 7 16	6	11° 49	1 11 03	3 14 34	1 19
Sun.	32	18 45 40	68		S. 23 2 40	8		1 10 99	3 43 09	

AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S			Equation of Time, to be added to subl. from Mean Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semidiam.*		
Thur.	1	16 ^h 28 ^m 55 ^s 40	S. 21° 48' 35" 7	16' 14" 9	10 ^m 48 ^s 28	16 ^h 39 ^m 43 ^s 68
Frid.	2	16 33 14 95	21 57 45 9	16 15 1	10 25 28	16 43 40 23
Sat.	3	16 37 35 12	22 6 30 8	16 15 3	10 1 67	16 47 36 79
Sun.	4	16 41 55 89	22 14 49 9	16 15 4	9 37 46	16 51 33 35
Mon.	5	16 46 17 24	22 22 43 2	16 15 5	9 12 67	16 55 29 91
Tues.	6	16 50 39 12	22 30 10 2	16 15 6	8 47 35	16 59 26 47
Wed.	7	16 55 1 51	22 37 10 8	16 15 8	8 21 51	17 3 23 02
Thur.	8	16 59 24 38	22 43 44 9	16 15 9	7 55 20	17 7 19 58
Frid.	9	17 3 47 70	22 49 52 1	16 16 0	7 28 44	17 11 16 14
Sat.	10	17 8 11 43	22 55 32 2	16 16 1	7 1 27	17 15 12 70
Sun.	11	17 12 35 56	23 0 45 2	16 16 2	6 33 70	17 19 9 26
Mon.	12	17 17 0 05	23 5 30 9	16 16 3	6 5 76	17 23 5 81
Tues.	13	17 21 24 88	23 9 49 0	16 16 4	5 37 49	17 27 2 37
Wed.	14	17 25 50 01	23 13 39 5	16 16 5	5 8 92	17 30 58 93
Thur.	15	17 30 15 42	23 17 2 3	16 16 6	4 40 07	17 34 55 49
Frid.	16	17 34 41 06	23 19 57 2	16 16 7	4 10 99	17 38 52 05
Sat.	17	17 39 6 93	23 22 24 1	16 16 8	3 41 67	17 42 48 60
Sun.	18	17 43 32 98	23 24 22 9	16 16 9	3 12 18	17 46 45 16
Mon.	19	17 47 59 20	23 25 53 5	16 17 0	2 42 52	17 50 41 72
Tues.	20	17 52 25 54	23 26 56 0	16 17 1	2 12 74	17 54 38 28
Wed.	21	17 56 51 99	23 27 30 2	16 17 1	1 42 85	17 58 34 84
Thur.	22	18 1 18 51	23 27 36 1	16 17 1	1 12 89	18 2 31 40
Frid.	23	18 5 45 05	23 27 13 7	16 17 1	0 42 90	18 6 27 95
Sat.	24	18 10 11 61	23 26 22 9	16 17 2	0 12 90	18 10 24 51
Sun.	25	18 14 38 14	23 25 3 8	16 17 2	0 17 07	18 14 21 07
Mon.	26	18 19 4 60	23 23 16 5	16 17 2	0 46 97	18 18 17 63
Tues.	27	18 23 30 96	23 21 0 8	16 17 3	1 16 77	18 22 14 19
Wed.	28	18 27 57 18	23 18 17 0	16 17 3	1 46 43	18 26 10 75
Thur.	29	18 32 23 23	23 15 5 1	16 17 3	2 15 93	18 30 7 30
Frid.	30	18 36 49 08	23 11 25 1	16 17 3	2 45 22	18 34 3 86
Sat.	31	18 41 14 69	23 7 17 2	16 17 3	3 14 27	18 38 0 42
Sun.	32	18 45 40 00	S. 23 2 41 6	16 17 3	3 43 02	18 41 56 98

* The Semidiam. at the present Noon may be assumed the same as that for Mean Noon

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	THE MOON'S			
	Longitude.	Latitude.		Semidiameter.		Horizontal Parallax.	
	<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Noon.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>
1	248 ^o 56 ⁱ 30 ^{''} 2	S. 0 ^{''} 73	9.9937071	15 58 ⁱ 9 ^{''}	15 54 ⁱ 6 ^{''}	58 39 ⁱ 0 ^{''}	58 23 ⁱ 1 ^{''}
2	249 57 24 5	0 62	9.9936424	15 49 8	15 44 5	58 5 5	57 46 1
3	250 58 19 9	0 50	9.9935790	15 39 0	15 33 3	57 25 9	57 5 1
4	251 59 16 3	0 36	9.9935169	15 27 5	15 21 8	56 43 7	56 22 1
5	253 0 13 7	0 23	9.9934561	15 16 1	15 10 8	56 2 0	55 42 1
6	254 1 11 9	S. 0 10	9.9933968	15 5 8	15 1 2	55 23 9	55 7 1
7	255 2 10 8	N. 0 02	9.9933390	14 57 1	14 53 6	54 52 1	54 39 4
8	256 3 10 3	0 14	9.9932830	14 50 8	14 48 7	54 29 1	54 21 4
9	257 4 10 4	0 23	9.9932289	14 47 2	14 46 5	54 15 9	54 13 1
10	258 5 11 1	0 29	9.9931769	14 46 5	14 47 2	54 13 2	54 15 9
11	259 6 12 3	0 32	9.9931271	14 48 6	14 50 8	54 21 0	54 28 4
12	260 7 14 0	0 32	9.9930795	14 53 5	14 56 8	54 38 9	54 51 4
13	261 8 16 3	0 29	9.9930343	15 0 6	15 4 9	55 5 0	55 20 8
14	262 9 19 0	0 23	9.9929916	15 9 6	15 14 6	55 38 1	55 56 3
15	263 10 22 2	0 14	9.9929516	15 19 8	15 25 1	56 15 6	56 35 4
16	264 11 25 9	N. 0 04	9.9929142	15 30 5	15 35 8	56 54 8	57 14 1
17	265 12 30 1	S. 0 08	9.9928794	15 40 9	15 45 7	57 32 8	57 50 5
18	266 13 34 9	0 21	9.9928475	15 50 2	15 54 4	58 7 1	58 22 5
19	267 14 40 3	0 33	9.9928185	15 58 0	16 1 2	58 35 7	58 47 3
20	268 15 46 3	0 46	9.9927923	16 3 8	16 5 9	58 57 0	59 4 6
21	269 16 53 0	0 57	9.9927689	16 7 4	16 8 5	59 10 2	59 14 4
22	270 18 0 3	0 67	9.9927480	16 9 0	16 9 1	59 16 0	59 16 3
23	271 19 8 1	0 73	9.9927296	16 8 8	16 8 3	59 15 4	59 13 3
24	272 20 16 6	0 78	9.9927136	16 7 3	16 6 1	59 9 7	59 5 2
25	273 21 25 8	0 79	9.9926998	16 4 6	16 2 9	58 59 9	58 53 7
26	274 22 35 5	0 77	9.9926882	16 1 0	15 58 8	58 46 6	58 38 6
27	275 23 45 6	0 72	9.9926786	15 56 4	15 53 7	58 29 8	58 19 7
28	276 24 56 2	0 64	9.9926709	15 50 7	15 47 5	58 8 7	57 56 9
29	277 26 7 1	0 54	9.9926652	15 44 0	15 40 2	57 44 1	57 30 4
30	278 27 18 4	0 42	9.9926612	15 36 2	15 32 1	57 15 6	57 0 4
31	279 28 29 9	0 28	9.9926589	15 27 6	15 23 2	56 44 2	56 27 8
32	280 29 41 3	S. 0 14	9.9926583	15 18 7	15 14 2	56 11 4	55 54 8

MEAN TIME.

		THE MOON'S									
Day of the Week.	Day of the Month.	Longitude.				Latitude.				Age.	Meridian
		Noon.		Midnight.		Noon.		Midnight.		Noon.	Passage.
		°	'	°	'	°	'	°	'	d	h m
Thur.	1	240	12 45 6	247	10 53 0	S.3	27 9 2	S.2	57 22 3	28 8	♄
Frid.	2	254	4 35 0	260	53 27 2	2	25 15 4	1	51 23 4	0 3	0 6 2
Sat.	3	267	37 12 4	274	15 40 2	1	16 20 8	S.0	40 40 6	1 3	1 4 4
Sun.	4	280	48 46 7	287	16 35 5	S.0	4 54 4	N.0	30 28 6	2 3	1 59 8
Mon.	5	293	39 15 9	299	57 4 2	N.1	5 2 5	1	38 23 1	3 3	2 51 6
Tues.	6	306	10 20 5	312	19 30 4	2	10 10 9	2	40 6 9	4 3	3 39 4
Wed.	7	318	25 1 9	324	27 27 8	3	7 56 4	3	33 25 4	5 3	4 23 8
Thur.	8	330	27 21 3	336	25 18 5	3	56 23 4	4	16 39 4	6 3	5 5 7
Frid.	9	342	21 55 7	348	17 50 2	4	34 5 1	4	48 32 7	7 3	5 46 1
Sat.	10	354	13 39 0	0	9 58 6	4	59 55 4	5	8 6 4	8 3	6 26 1
Sun.	11	6	7 24 7	12	6 30 7	5	12 59 7	5	14 31 2	9 3	7 6 9
Mon.	12	18	7 49 3	24	11 49 5	5	12 36 1	5	7 11 2	10 3	7 49 4
Tues.	13	30	18 59 0	36	29 40 5	4	58 14 7	4	45 45 9	11 3	8 34 5
Wed.	14	42	44 14 5	49	2 56 0	4	29 46 2	4	10 19 9	12 3	9 23 2
Thur.	15	55	25 56 7	61	53 21 9	3	47 33 0	3	21 36 7	13 3	10 15 5
Frid.	16	68	25 14 7	75	1 31 1	2	52 43 6	2	21 12 0	14 3	11 11 1
Sat.	17	81	42 4 2	88	26 41 7	1	47 22 6	N.1	11 42 0	15 3	12 8 7
Sun.	18	95	15 9 1	102	7 7 9	N.0	34 37 6	S.0	3 16 6	16 3	13 6 5
Mon.	19	109	2 17 2	116	0 14 4	S.0	41 26 6	1	19 15 7	17 3	14 2 8
Tues.	20	123	0 35 9	130	2 57 5	1	56 7 4	2	31 23 8	18 3	14 56 8
Wed.	21	137	6 55 3	144	12 5 2	3	4 29 6	3	34 51 2	19 3	15 48 4
Thur.	22	151	18 6 0	158	24 35 1	4	1 58 3	4	25 23 4	20 3	16 38 3
Frid.	23	165	31 13 2	172	37 41 2	4	44 44 3	4	59 42 4	21 3	17 27 4
Sat.	24	179	43 41 9	186	48 58 1	5	10 4 5	5	15 42 3	22 3	18 16 9
Sun.	25	193	53 14 7	200	56 15 6	5	16 32 1	5	12 35 4	23 3	19 7 8
Mon.	26	207	57 47 0	214	57 32 9	5	3 58 8	4	50 52 9	24 3	20 1 0
Tues.	27	221	55 19 4	228	50 50 9	4	33 32 8	4	12 18 1	25 3	20 56 6
Wed.	28	235	43 53 3	242	34 12 1	3	47 30 9	3	19 37 6	26 3	21 53 8
Thur.	29	249	21 33 4	256	5 44 0	2	49 5 7	2	16 26 4	27 3	22 51 4
Frid.	30	262	46 32 6	269	23 48 0	1	42 9 4	S.1	6 47 4	28 3	23 47 6
Sat.	31	275	57 23 1	282	27 10 7	S.0	30 51 2	N.0	5 8 6	29 3	♄
Sun.	32	288	53 9 0	295	15 16 8	N.0	40 43 4	N.1	15 26 3	0 7	0 40 9

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
THURSDAY 1.				SATURDAY 3.			
0	15 48 58 ^s 22	S. 23 35 10 ^s 5	41 ^s 52	0	17 49 31 ^s 37	S. 24 42 39 ^s 8	24 7
1	15 51 29 ^s 45	23 40 19 ^s 6	49 ^s 93	1	17 51 58 ^s 61	24 40 14 ^s 7	25 4
2	15 54 0 ^s 77	23 45 19 ^s 2	48 ^s 37	2	17 54 25 ^s 59	24 37 40 ^s 7	27 12
3	15 56 32 ^s 18	23 50 9 ^s 4	46 ^s 78	3	17 56 52 ^s 31	24 34 58 ^s 0	28 57
4	15 59 3 ^s 65	23 54 50 ^s 1	45 ^s 22	4	17 59 18 ^s 77	24 32 6 ^s 6	30 4
5	16 1 35 ^s 20	23 59 21 ^s 4	43 ^s 62	5	18 1 44 ^s 95	24 29 6 ^s 5	31 4
6	16 4 6 ^s 81	24 3 43 ^s 1	42 ^s 03	6	18 4 10 ^s 86	24 25 57 ^s 9	32 57
7	16 6 38 ^s 47	24 7 55 ^s 3	40 ^s 43	7	18 6 36 ^s 48	24 22 40 ^s 7	34 7
8	16 9 10 ^s 18	24 11 57 ^s 9	38 ^s 83	8	18 9 1 ^s 82	24 19 15 ^s 1	35 4
9	16 11 41 ^s 94	24 15 50 ^s 9	37 ^s 23	9	18 11 26 ^s 86	24 15 41 ^s 0	37 5
10	16 14 13 ^s 72	24 19 34 ^s 3	35 ^s 63	10	18 13 51 ^s 61	24 11 58 ^s 6	38 6
11	16 16 45 ^s 53	24 23 8 ^s 1	34 ^s 03	11	18 16 16 ^s 05	24 8 7 ^s 9	39 11
12	16 19 17 ^s 36	24 26 32 ^s 3	32 ^s 42	12	18 18 40 ^s 19	24 4 8 ^s 9	41 11
13	16 21 49 ^s 20	24 29 46 ^s 8	30 ^s 80	13	18 21 4 ^s 01	24 0 1 ^s 8	42 53
14	16 24 21 ^s 04	24 32 51 ^s 6	29 ^s 18	14	18 23 27 ^s 52	23 55 46 ^s 6	43 51
15	16 26 52 ^s 88	24 35 46 ^s 7	27 ^s 58	15	18 25 50 ^s 71	23 51 23 ^s 3	44 29
16	16 29 24 ^s 71	24 38 32 ^s 2	25 ^s 97	16	18 28 13 ^s 58	23 46 52 ^s 1	45 51
17	16 31 56 ^s 51	24 41 8 ^s 0	24 ^s 35	17	18 30 36 ^s 12	23 42 13 ^s 0	47 13
18	16 34 28 ^s 29	24 43 34 ^s 1	22 ^s 73	18	18 32 58 ^s 33	23 37 26 ^s 0	48 11
19	16 37 0 ^s 03	24 45 50 ^s 5	21 ^s 12	19	18 35 20 ^s 20	23 32 31 ^s 3	49 40
20	16 39 31 ^s 74	24 47 57 ^s 2	19 ^s 52	20	18 37 41 ^s 74	23 27 28 ^s 9	51 47
21	16 42 3 ^s 39	24 49 54 ^s 3	17 ^s 88	21	18 40 2 ^s 93	23 22 18 ^s 8	52 39
22	16 44 34 ^s 98	24 51 41 ^s 6	16 ^s 28	22	18 42 23 ^s 78	23 17 1 ^s 2	54 19
23	16 47 6 ^s 51	S. 24 53 19 ^s 3	14 ^s 68	23	18 44 44 ^s 28	S. 23 11 36 ^s 1	55 42
FRIDAY 2.				SUNDAY 4.			
0	16 49 37 ^s 96	S. 24 54 47 ^s 4	13 ^s 07	0	18 47 4 ^s 44	S. 23 6 3 ^s 6	56 45
1	16 52 9 ^s 33	24 56 5 ^s 8	11 ^s 47	1	18 49 24 ^s 24	23 0 23 ^s 7	57 25
2	16 54 40 ^s 61	24 57 14 ^s 6	9 ^s 35	2	18 51 43 ^s 69	22 54 36 ^s 6	58 05
3	16 57 11 ^s 80	24 58 13 ^s 7	8 ^s 27	3	18 54 2 ^s 77	22 48 42 ^s 3	60 25
4	16 59 42 ^s 88	24 59 3 ^s 3	6 ^s 67	4	18 56 21 ^s 50	22 42 40 ^s 8	61 45
5	17 2 13 ^s 85	24 59 43 ^s 3	5 ^s 07	5	18 58 39 ^s 87	22 36 32 ^s 3	62 58
6	17 4 44 ^s 69	25 0 13 ^s 7	3 ^s 48	6	19 0 57 ^s 87	22 30 16 ^s 8	63 73
7	17 7 15 ^s 42	25 0 34 ^s 6	1 ^s 88	7	19 3 15 ^s 50	22 23 54 ^s 4	64 47
8	17 9 46 ^s 00	25 0 45 ^s 9	0 ^s 32	8	19 5 32 ^s 77	22 17 25 ^s 2	66 00
9	17 12 16 ^s 45	25 0 47 ^s 8	1 ^s 27	9	19 7 49 ^s 67	22 10 49 ^s 2	67 15
10	17 14 46 ^s 75	25 0 40 ^s 2	2 ^s 83	10	19 10 6 ^s 19	22 4 6 ^s 5	68 22
11	17 17 16 ^s 89	25 0 23 ^s 2	4 ^s 40	11	19 12 22 ^s 35	21 57 17 ^s 2	69 22
12	17 19 46 ^s 87	24 59 56 ^s 8	5 ^s 97	12	19 14 38 ^s 13	21 50 21 ^s 3	70 28
13	17 22 16 ^s 68	24 59 21 ^s 0	7 ^s 52	13	19 16 53 ^s 54	21 43 19 ^s 0	71 47
14	17 24 46 ^s 31	24 58 35 ^s 9	9 ^s 07	14	19 19 8 ^s 57	21 36 10 ^s 2	72 50
15	17 27 15 ^s 76	24 57 41 ^s 5	10 ^s 62	15	19 21 23 ^s 23	21 28 55 ^s 2	73 53
16	17 29 45 ^s 01	24 56 37 ^s 8	12 ^s 15	16	19 23 37 ^s 51	21 21 33 ^s 9	74 58
17	17 32 14 ^s 07	24 55 24 ^s 9	13 ^s 68	17	19 25 51 ^s 42	21 14 6 ^s 4	75 53
18	17 34 42 ^s 92	24 54 2 ^s 8	15 ^s 22	18	19 28 4 ^s 95	21 6 32 ^s 9	76 40
19	17 37 11 ^s 56	24 52 31 ^s 5	16 ^s 72	19	19 30 18 ^s 10	20 58 53 ^s 3	77 53
20	17 39 39 ^s 99	24 50 51 ^s 2	18 ^s 23	20	19 32 30 ^s 87	20 51 7 ^s 8	78 57
21	17 42 8 ^s 19	24 49 1 ^s 8	19 ^s 73	21	19 34 43 ^s 27	20 44 1 ^s 2	79 52
22	17 44 36 ^s 15	24 47 3 ^s 4	21 ^s 22	22	19 36 55 ^s 29	20 37 1 ^s 2	80 38
23	17 47 3 ^s 88	24 44 56 ^s 1	22 ^s 72	23	19 39 6 ^s 94	20 30 1 ^s 2	81 33
24	17 49 31 ^s 37	S. 24 42 39 ^s 8		24	19 41 18 ^s 20	S. 20 22 1 ^s 2	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>MONDAY 5.</i>				<i>WEDNESDAY 7.</i>			
0	h m s 19 41 18 ²⁰	S. 20 19 7 ⁸	82 ⁸⁵	0	h m s 21 19 27 ⁹²	S. 12 20 23 ⁰	113 ⁶⁸
1	19 43 29 ⁰⁹	20 10 53 ⁷	83 ²⁷	1	21 21 23 ⁰⁹	12 9 0 ⁹	114 ¹⁰
2	19 45 39 ⁶¹	20 2 34 ¹	84 ¹⁷	2	21 23 18 ⁰²	11 57 36 ³	114 ⁴⁸
3	19 47 49 ⁷⁵	19 54 9 ¹	85 ⁰⁵	3	21 25 12 ⁶⁹	11 46 9 ⁴	114 ³⁸
4	19 49 59 ⁵²	19 45 38 ⁸	85 ⁹⁵	4	21 27 7 ¹²	11 34 40 ¹	115 ²⁷
5	19 52 8 ⁹²	19 37 3 ¹	86 ⁸⁰	5	21 29 1 ³⁰	11 23 8 ⁵	115 ⁶⁵
6	19 54 17 ⁹⁵	19 28 22 ³	87 ⁶⁷	6	21 30 55 ²⁵	11 11 34 ⁶	116 ⁰⁰
7	19 56 26 ⁶⁰	19 19 36 ³	88 ⁵⁰	7	21 32 48 ⁹⁶	10 59 58 ⁶	116 ³⁷
8	19 58 34 ⁸⁹	19 10 45 ³	89 ³⁵	8	21 34 42 ⁴⁵	10 48 20 ⁴	116 ⁷²
9	20 0 42 ⁸¹	19 1 49 ²	90 ¹⁷	9	21 36 35 ⁷⁰	10 36 40 ¹	117 ⁰⁵
10	20 2 50 ³⁶	18 52 48 ²	90 ⁹⁷	10	21 38 28 ⁷⁴	10 24 57 ⁸	117 ³⁸
11	20 4 57 ⁵⁵	18 43 42 ⁴	91 ⁷⁷	11	21 40 21 ⁵⁶	10 13 13 ⁵	117 ⁷²
12	20 7 4 ³⁸	18 34 31 ⁸	92 ⁵⁵	12	21 42 14 ¹⁶	10 1 27 ²	118 ⁰³
13	20 9 10 ⁸⁴	18 25 16 ⁵	93 ³³	13	21 44 6 ⁵⁵	9 49 39 ⁰	118 ³⁵
14	20 11 16 ⁹⁴	18 15 56 ⁵	94 ¹⁰	14	21 45 58 ⁷³	9 37 48 ⁹	118 ⁶⁵
15	20 13 22 ⁶⁹	18 6 31 ⁹	94 ⁸³	15	21 47 50 ⁷¹	9 25 57 ⁰	118 ⁹³
16	20 15 28 ⁰⁷	17 57 2 ⁹	95 ⁵⁸	16	21 49 42 ⁵⁰	9 14 3 ⁴	119 ²⁸
17	20 17 33 ¹¹	17 47 29 ⁴	96 ³²	17	21 51 34 ⁰⁸	9 2 8 ⁰	119 ⁵²
18	20 19 37 ⁷⁹	17 37 51 ⁵	97 ⁰³	18	21 53 25 ⁴⁸	8 50 10 ⁹	119 ⁷⁸
19	20 21 42 ¹²	17 28 9 ³	97 ⁷³	19	21 55 16 ⁶⁹	8 38 12 ²	120 ⁰³
20	20 23 46 ¹¹	17 18 22 ⁹	98 ⁴³	20	21 57 7 ⁷¹	8 26 12 ⁰	120 ³²
21	20 25 49 ⁷⁴	17 8 32 ³	99 ¹⁰	21	21 58 58 ⁵⁶	8 14 10 ¹	120 ⁵⁵
22	20 27 53 ⁰⁴	16 58 37 ⁷	99 ⁷⁸	22	22 0 49 ²⁴	8 2 6 ⁸	120 ⁷⁸
23	20 29 56 ⁰⁰	S. 16 48 39 ⁰	100 ⁴⁵	23	22 2 39 ⁷⁴	S. 7 50 2 ¹	121 ⁰³
<i>TUESDAY 6.</i>				<i>THURSDAY 8.</i>			
0	20 31 58 ⁶²	S. 16 38 36 ³	101 ¹⁰	0	22 4 30 ⁰⁸	S. 7 37 55 ⁹	121 ²⁵
1	20 34 0 ⁹¹	16 28 29 ⁷	101 ⁷²	1	22 6 20 ²⁶	7 25 48 ⁴	121 ⁴⁸
2	20 36 2 ⁸⁶	16 18 19 ⁴	102 ³⁷	2	22 8 10 ²⁸	7 13 39 ⁵	121 ⁶⁸
3	20 38 4 ⁴⁹	16 8 5 ²	102 ⁹⁸	3	22 10 0 ¹⁵	7 1 29 ⁴	121 ⁹⁰
4	20 40 5 ⁷⁹	15 57 47 ³	103 ⁵⁸	4	22 11 49 ⁸⁶	6 49 18 ⁰	122 ⁰⁸
5	20 42 6 ⁷⁶	15 47 25 ⁸	104 ¹⁸	5	22 13 39 ⁴³	6 37 5 ⁵	122 ³⁰
6	20 44 7 ⁴²	15 37 0 ⁷	104 ⁷⁸	6	22 15 28 ⁸⁷	6 24 51 ⁷	122 ⁴⁷
7	20 46 7 ⁷⁶	15 26 32 ⁰	105 ³⁵	7	22 17 18 ¹⁶	6 12 36 ⁹	122 ⁶⁵
8	20 48 7 ⁷⁸	15 15 59 ⁹	105 ⁹²	8	22 19 7 ³²	6 0 21 ⁰	122 ⁹³
9	20 50 7 ⁴⁹	15 5 24 ⁴	106 ⁴⁷	9	22 20 56 ³⁶	5 48 4 ⁰	123 ⁰⁰
10	20 52 6 ⁸⁹	14 54 45 ⁶	107 ⁰²	10	22 22 45 ²⁶	5 35 46 ⁰	123 ¹⁵
11	20 54 5 ⁹⁹	14 44 3 ⁵	107 ⁵⁷	11	22 24 34 ⁰⁵	5 23 27 ¹	123 ³⁰
12	20 56 4 ⁷⁸	14 33 18 ¹	108 ⁰⁸	12	22 26 22 ⁷²	5 11 7 ³	123 ⁴⁵
13	20 58 3 ²⁷	14 22 29 ⁶	108 ⁶²	13	22 28 11 ²⁸	4 58 46 ⁶	123 ⁶⁰
14	21 0 1 ⁴⁷	14 11 37 ⁹	109 ¹²	14	22 29 59 ⁷³	4 46 25 ⁰	123 ⁷²
15	21 1 59 ³⁸	14 0 43 ²	109 ⁶²	15	22 31 48 ⁰⁸	4 34 2 ⁷	123 ⁸⁷
16	21 3 56 ⁹⁹	13 49 45 ⁵	110 ¹⁰	16	22 33 36 ³²	4 21 39 ³	123 ⁹⁷
17	21 5 54 ³²	13 38 44 ⁹	110 ⁵⁸	17	22 35 24 ⁴⁸	4 9 15 ⁷	124 ¹⁰
18	21 7 51 ³⁷	13 27 41 ⁴	111 ⁰⁵	18	22 37 12 ⁵⁴	3 56 51 ¹	124 ²⁰
19	21 9 48 ¹⁴	13 16 35 ¹	111 ⁵²	19	22 39 0 ⁵¹	3 44 25 ⁹	124 ³⁰
20	21 11 44 ⁶³	13 5 26 ⁰	111 ⁹⁷	20	22 40 48 ⁴⁰	3 32 0 ¹	124 ³⁸
21	21 13 40 ⁸⁵	12 54 14 ²	112 ⁴²	21	22 42 36 ²²	3 19 33 ⁸	124 ⁴⁸
22	21 15 36	12 42 59 ⁷	112 ⁸⁵	22	22 44 23 ⁹⁶	3 7 6 ⁹	124 ⁵⁷
23	21 17 32	12 31 42 ⁶	113 ²⁷	23	22 46 11 ⁶³	2 54 39 ⁵	124 ⁶⁵
24	21 19 28	12 20 25 ⁸	113 ⁶⁸	24	22 47 50 ⁰²	2 42 11 ⁶	124 ⁷²

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>FRIDAY 9.</i>				<i>SUNDAY 11.</i>			
0	22 47 59 ²³	S. 2 42 11 ⁶	124 ⁷⁸	0	0 14 9 ⁵⁶	N. 7 13 15 ⁵	120 ⁷
1	22 49 46 ⁷⁷	2 29 43 ³	124 ⁷⁸	1	0 15 59 ⁰⁹	7 25 21 ²	120 ⁷
2	22 51 34 ²⁶	2 17 14 ⁶	124 ⁸³	2	0 17 48 ⁷⁷	7 37 25 ⁵	120 ⁷
3	22 53 21 ⁶⁹	2 4 45 ⁶	124 ⁸⁸	3	0 19 38 ⁵⁹	7 49 28 ³	120 ⁷
4	22 55 9 ⁰⁸	1 52 16 ³	124 ⁹⁵	4	0 21 28 ⁵⁶	8 1 29 ⁷	119 ⁷
5	22 56 56 ⁴²	1 39 46 ⁶	124 ⁹⁷	5	0 23 18 ⁶⁹	8 13 29 ⁵	119 ⁷
6	22 58 43 ⁷⁸	1 27 16 ⁸	125 ⁰²	6	0 25 8 ⁹⁷	8 25 27 ⁸	119 ⁴
7	23 0 30 ⁹⁸	1 14 46 ⁷	125 ⁰³	7	0 26 59 ⁴²	8 37 24 ⁵	119 ⁵
8	23 2 18 ²¹	1 2 16 ⁵	125 ⁰⁷	8	0 28 50 ⁰³	8 49 19 ⁵	118 ⁸
9	23 4 5 ⁴¹	0 49 46 ¹	125 ⁰⁸	9	0 30 40 ⁸²	9 1 12 ⁸	118 ⁶
10	23 5 52 ⁵⁹	0 37 15 ⁶	125 ⁰⁸	10	0 32 31 ⁷⁸	9 13 4 ⁴	118 ²
11	23 7 39 ⁷⁵	0 24 45 ¹	125 ¹⁰	11	0 34 22 ⁹²	9 24 54 ²	118 ²
12	23 9 26 ⁹⁰	S. 0 12 14 ⁵	125 ¹⁰	12	0 36 14 ²⁴	9 36 42 ²	117 ⁴
13	23 11 14 ⁰³	N. 0 0 16 ¹	125 ⁰⁸	13	0 38 5 ⁷⁵	9 48 28 ³	117 ⁵
14	23 13 1 ¹⁶	0 12 46 ⁶	125 ⁰⁷	14	0 39 57 ⁴⁵	10 0 12 ⁵	117 ²
15	23 14 48 ²⁹	0 25 17 ⁰	125 ⁰⁵	15	0 41 49 ³⁴	10 11 54 ⁷	116 ⁷
16	23 16 35 ⁴²	0 37 47 ³	125 ⁰³	16	0 43 41 ⁴³	10 23 35 ⁰	116 ⁵
17	23 18 22 ⁵⁵	0 50 17 ⁵	125 ⁰⁰	17	0 45 33 ⁷³	10 35 13 ¹	116 ²
18	23 20 9 ⁶⁹	1 2 47 ⁵	124 ⁹⁸	18	0 47 26 ²³	10 46 49 ²	116 ⁶
19	23 21 56 ⁸⁵	1 15 17 ²	124 ⁹⁸	19	0 49 18 ⁹⁴	10 58 23 ¹	115 ²
20	23 23 44 ⁰²	1 27 46 ⁷	124 ⁸⁷	20	0 51 11 ⁸⁶	11 9 54 ⁹	114 ²
21	23 25 31 ¹⁸	1 40 15 ⁹	124 ⁸⁰	21	0 53 5 ⁰⁰	11 21 24 ⁴	114 ²
22	23 27 18 ⁴⁵	1 52 44 ⁷	124 ⁷⁸	22	0 54 58 ³⁷	11 32 51 ⁶	114 ²
23	23 29 5 ⁷¹	N. 2 5 13 ²	124 ⁶⁸	23	0 56 51 ⁹⁵	N. 11 44 16 ⁴	113 ⁷
<i>SATURDAY 10.</i>				<i>MONDAY 12.</i>			
0	23 30 53 ⁰⁹	N. 2 17 41 ³	124 ⁶⁰	0	0 58 45 ⁷⁷	N. 11 55 38 ⁹	113 ²
1	23 32 40 ³³	2 30 8 ⁹	124 ⁶³	1	1 0 39 ⁸¹	12 6 58 ⁹	113 ²
2	23 34 27 ⁷¹	2 42 36 ¹	124 ⁶³	2	1 2 34 ⁰⁹	12 18 16 ⁵	113 ²
3	23 36 15 ¹³	2 55 2 ⁷	124 ⁶⁵	3	1 4 28 ⁶¹	12 29 31 ⁵	112 ⁷
4	23 38 2 ⁶¹	3 7 28 ⁸	124 ⁶³	4	1 6 23 ³⁷	12 40 43 ⁹	112 ⁴
5	23 39 50 ¹⁴	3 19 54 ²	124 ¹⁵	5	1 8 18 ³⁸	12 51 53 ⁷	111 ¹¹
6	23 41 37 ⁷⁴	3 32 19 ¹	124 ⁰²	6	1 10 13 ⁶⁴	13 3 0 ⁸	110 ⁷
7	23 43 25 ⁴⁰	3 44 43 ²	123 ⁹²	7	1 12 9 ¹⁵	13 14 5 ²	110 ⁷
8	23 45 13 ¹³	3 57 6 ⁷	123 ⁷⁸	8	1 14 4 ⁹²	13 25 6 ⁸	109 ⁷
9	23 47 0 ⁹³	4 9 29 ⁴	123 ⁶⁷	9	1 16 0 ⁹⁴	13 36 5 ⁵	109 ²
10	23 48 48 ⁸⁰	4 21 51 ⁴	123 ⁵²	10	1 17 57 ²³	13 47 1 ⁴	108 ²
11	23 50 36 ⁷⁶	4 34 12 ⁵	123 ³⁸	11	1 19 53 ⁷⁹	13 57 54 ³	108 ²
12	23 52 24 ⁸¹	4 46 32 ⁸	123 ²³	12	1 21 50 ⁶¹	14 8 44 ²	107 ²
13	23 54 12 ⁹⁵	4 58 52 ²	123 ⁰⁷	13	1 23 47 ⁷¹	14 19 31 ¹	107 ²
14	23 56 1 ¹⁸	5 11 10 ⁶	122 ⁹³	14	1 25 45 ⁰⁹	14 30 14 ⁸	106 ⁷
15	23 57 49 ⁵¹	5 23 28 ¹	122 ⁷⁸	15	1 27 42 ⁷⁴	14 40 55 ⁵	106 ²
16	23 59 37 ⁹⁴	5 35 44 ⁶	122 ⁵⁷	16	1 29 40 ⁶⁸	14 51 32 ⁸	105 ²
17	0 1 26 ⁴⁸	5 48 0 ⁰	122 ³⁸	17	1 31 38 ⁹¹	15 2 7 ⁰	105 ²
18	0 3 15 ¹³	6 0 14 ³	122 ²²	18	1 33 37 ⁴²	15 12 37 ⁷	104 ²
19	0 5 3 ⁸⁹	6 12 27 ⁶	122 ⁰⁰	19	1 35 36 ²³	15 23 5 ¹	104 ²
20	0 6 52 ⁷⁷	6 24 39 ⁶	121 ⁸²	20	1 37 35 ³³	15 33 29 ¹	103 ²
21	0 8 41 ⁷⁸	6 36 50 ⁵	121 ⁶⁰	21	1 39 34 ⁷³	15 43 49 ⁵	
22	0 10 30 ⁹¹	6 49 0 ¹	121 ⁴⁰	22	1 41 34 ⁴³	15 54 6 ⁴	
23	0 12 20 ¹⁷	7 1 8 ⁵	121 ¹⁷	23	1 43 34 ⁴³	16 4 19 ¹	
24	0 14 9 ⁵⁶	N. 7 13 15 ⁵		24	1 45 34 ⁷⁴	N. 16 14 29 ¹	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

r.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>TUESDAY 13.</i>				<i>THURSDAY 15.</i>			
	^h ^m ^s	[°] ['] ["]	["]		^h ^m ^s	[°] ['] ["]	["]
0	1 45 34.74	N.16 14 29.2	100.97	0	3 28 25.54	N.22 49 0.5	58.20
1	1 47 35.36	16 24 35.0	100.83	1	3 30 42.63	22 54 49.7	57.05
2	1 49 36.28	16 34 37.0	99.70	2	3 33 0.05	23 0 32.0	55.85
3	1 51 37.52	16 44 35.2	99.03	3	3 35 17.81	23 6 7.1	54.67
4	1 53 39.08	16 54 29.4	98.27	4	3 37 35.91	23 11 35.1	53.45
5	1 55 40.96	17 4 19.6	97.70	5	3 39 54.33	23 16 55.8	52.25
6	1 57 43.15	17 14 5.8	97.02	6	3 42 13.07	23 22 9.3	51.02
7	1 59 45.67	17 23 47.9	96.32	7	3 44 32.14	23 27 15.4	49.78
8	2 1 48.52	17 33 25.8	95.62	8	3 46 51.54	23 32 14.1	48.55
9	2 3 51.69	17 42 59.5	94.88	9	3 49 11.25	23 37 5.4	47.27
0	2 5 55.20	17 52 28.8	94.17	10	3 51 31.27	23 41 49.0	46.03
1	2 7 59.04	18 1 53.8	93.48	11	3 53 51.61	23 46 25.1	44.73
2	2 10 3.21	18 11 14.4	92.68	12	3 56 12.26	23 50 53.5	43.43
3	2 12 7.72	18 20 30.5	91.92	13	3 58 33.22	23 55 14.1	42.15
4	2 14 12.57	18 29 42.0	91.15	14	4 0 54.48	23 59 27.0	40.83
5	2 16 17.76	18 38 48.9	90.37	15	4 3 16.03	24 3 32.0	39.50
6	2 18 23.29	18 47 51.1	89.88	16	4 5 37.88	24 7 29.0	38.18
7	2 20 29.16	18 56 48.6	88.77	17	4 8 0.03	24 11 18.1	36.85
8	2 22 35.38	19 5 41.2	87.97	18	4 10 22.45	24 14 59.2	35.48
9	2 24 41.95	19 14 29.0	87.18	19	4 12 45.16	24 18 32.1	34.13
20	2 26 48.86	19 23 11.8	86.39	20	4 15 8.14	24 21 56.9	32.78
21	2 28 56.12	19 31 49.6	85.48	21	4 17 31.39	24 25 13.6	31.38
22	2 31 3.73	19 40 22.3	84.58	22	4 19 54.91	24 28 21.9	30.03
23	2 33 11.69	N.19 48 49.8	83.78	23	4 22 18.69	N.24 31 22.0	28.63
<i>WEDNESDAY 14.</i>				<i>FRIDAY 16.</i>			
0	2 35 20.00	N.19 57 12.1	82.93	0	4 24 42.73	N.24 34 13.7	27.22
1	2 37 28.66	20 5 29.1	81.95	1	4 27 7.02	24 36 57.0	25.82
2	2 39 37.68	20 13 40.8	81.05	2	4 29 31.56	24 39 31.9	24.38
3	2 41 47.05	20 21 47.1	80.12	3	4 31 56.33	24 41 58.2	22.97
4	2 43 56.77	20 29 47.8	79.20	4	4 34 21.35	24 44 16.0	21.53
5	2 46 6.85	20 37 43.0	78.28	5	4 36 46.59	24 46 25.2	20.08
6	2 48 17.29	20 45 32.5	77.30	6	4 39 12.06	24 48 25.7	18.63
7	2 50 28.07	20 53 16.3	76.35	7	4 41 37.74	24 50 17.5	17.18
8	2 52 39.22	21 0 54.4	75.37	8	4 44 3.64	24 52 0.6	15.72
9	2 54 50.72	21 8 26.6	74.38	9	4 46 29.75	24 53 34.9	14.23
10	2 57 2.57	21 15 52.9	73.38	10	4 48 56.06	24 55 0.3	12.77
11	2 59 14.78	21 23 13.2	72.37	11	4 51 22.56	24 56 16.9	11.28
12	3 1 27.35	21 30 27.4	71.38	12	4 53 49.26	24 57 24.6	9.78
13	3 3 40.27	21 37 35.5	70.32	13	4 56 16.14	24 58 23.3	8.28
14	3 5 53.55	21 44 37.4	69.27	14	4 58 43.20	24 59 13.0	6.80
15	3 8 7.18	21 51 33.0	68.27	15	5 1 10.42	24 59 53.8	5.27
16	3 10 21.16	21 58 22.3	67.15	16	5 3 37.81	25 0 25.4	3.77
17	3 12 35.49	22 5 5.2	66.08	17	5 6 5.36	25 0 48.0	2.27
18	3 14 50.18	22 11 41.7	64.98	18	5 8 33.06	25 1 1.6	0.72
19	3 17 5.8	22 17 11.6	63.87	19	5 11 0.90	25 1 5.9	0.78
20	3 19 20.4	22 22 5.8	62.77	20	5 13 28.88	25 1 1.2	2.33
21	3 21 36.4		61.65	21	5 15 56.98	25 0 47.2	3.85
22	3 23 52.4		60	22	5 18 25.22	25 0 24.1	5.40
23	3 26 8.4		59	23	5 20 53.56	24 59 51.7	6.93

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

hour.	Right Ascension.	Declination.	Diff. Dec. for 10 th .	Hour.	Right Ascension.	Declination.	
<i>SATURDAY 17.</i>				<i>MONDAY 19.</i>			
	<i>h m s</i>	<i>° ' "</i>	<i>"</i>		<i>h m s</i>	<i>° ' "</i>	
0	5 23 22.02	N.24 59 10.1	8.47	0	7 22 2.55	N.21 25 22.7	
1	5 25 50.58	24 58 19.3	10.02	1	7 24 28.56	21 17 19.5	
2	5 28 19.23	24 57 19.2	11.57	2	7 26 53.78	21 9 8.1	
3	5 30 47.97	24 56 9.8	13.12	3	7 29 19.11	21 0 48.8	
4	5 33 16.80	24 54 51.1	14.67	4	7 31 44.24	20 52 21.4	
5	5 35 45.69	24 53 23.1	16.23	5	7 34 9.17	20 43 46.2	
6	5 38 14.66	24 51 45.7	17.78	6	7 36 33.90	20 35 3.1	
7	5 40 43.68	24 49 59.0	19.33	7	7 38 58.41	20 26 12.3	
8	5 43 12.76	24 48 3.0	20.90	8	7 41 22.72	20 17 13.8	
9	5 45 41.88	24 45 57.6	22.45	9	7 43 46.82	20 8 7.6	
10	5 48 11.04	24 43 42.9	24.02	10	7 46 10.70	19 58 53.8	
11	5 50 40.23	24 41 18.8	25.57	11	7 48 34.36	19 49 32.5	
12	5 53 9.45	24 38 45.4	27.13	12	7 50 57.80	19 40 3.8	
13	5 55 38.69	24 36 2.6	28.70	13	7 53 21.02	19 30 27.7	
14	5 58 7.93	24 33 10.4	30.25	14	7 55 44.01	19 20 44.3	
15	6 0 37.18	24 30 8.9	31.82	15	7 58 6.78	19 10 53.7	
16	6 3 6.43	24 26 58.0	33.35	16	8 0 29.33	19 0 56.0	
17	6 5 35.67	24 23 37.9	34.92	17	8 2 51.64	18 50 51.2	
18	6 8 4.89	24 20 8.4	36.47	18	8 5 13.73	18 40 39.4	
19	6 10 34.09	24 16 29.6	38.02	19	8 7 35.58	18 30 20.7	
20	6 13 3.26	24 12 41.5	39.55	20	8 9 57.20	18 19 55.2	
21	6 15 32.39	24 8 44.2	41.08	21	8 12 18.58	18 9 22.9	
22	6 18 1.47	24 4 37.7	42.63	22	8 14 39.73	17 58 43.9	
23	6 20 30.51	N.24 0 21.9	44.17	23	8 17 0.65	N.17 47 58.3	
<i>SUNDAY 18.</i>				<i>TUESDAY 20.</i>			
	<i>h m s</i>	<i>° ' "</i>	<i>"</i>		<i>h m s</i>	<i>° ' "</i>	
0	6 22 59.49	N.23 55 56.9	45.68	0	8 19 21.33	N.17 37 6.2	
1	6 25 28.41	23 51 22.8	47.22	1	8 21 41.78	17 26 7.7	
2	6 27 57.25	23 46 39.5	48.73	2	8 24 1.98	17 15 2.8	
3	6 30 26.03	23 41 47.1	50.25	3	8 26 21.95	17 3 51.6	
4	6 32 54.71	23 36 45.6	51.77	4	8 28 41.69	16 52 34.2	
5	6 35 23.31	23 31 35.0	53.27	5	8 31 1.18	16 41 10.8	
6	6 37 51.82	23 26 15.4	54.77	6	8 33 20.44	16 29 41.2	
7	6 40 20.23	23 20 46.8	56.25	7	8 35 39.46	16 18 5.8	
8	6 42 48.53	23 15 9.3	57.75	8	8 37 58.25	16 6 24.4	
9	6 45 16.71	23 9 22.8	59.23	9	8 40 16.80	15 54 37.3	
0	6 47 44.78	23 3 27.4	60.70	10	8 42 35.11	15 42 44.5	
1	6 50 12.73	22 57 23.2	62.18	11	8 44 53.20	15 30 46.0	
2	6 52 40.55	22 51 10.1	63.63	12	8 47 11.04	15 18 42.0	
3	6 55 8.24	22 44 48.3	65.10	13	8 49 28.66	15 6 32.5	
4	6 57 35.78	22 38 17.7	66.55	14	8 51 46.04	14 54 17.7	
5	7 0 3.18	22 31 38.4	67.98	15	8 54 3.19	14 41 57.6	
6	7 2 30.44	22 24 50.5	69.40	16	8 56 20.12	14 29 32.3	
7	7 4 57.54	22 17 54.1	70.83	17	8 58 36.82	14 17 1.9	
8	7 7 24.48	22 10 49.1	72.25	18	9 0 53.29	14 4 26.5	
9	7 9 51.25	22 3 35.6	73.67	19	9 3 0.54	13 51 46.2	
0	7 12 17.86	21 56 13.6	75.05	20	9 3 0.54	13 38 1.2	
1	7 14 44.30	21 48 43.3	76.43	21	9 3 0.54	13 24 1.2	
2	7 17 10.57	21 41 4.7	77.82	22	9 3 0.54	13 10 1.2	
3	7 19 36.65	21 33 17.8	79.18	23	9 3 0.54	12 56 1.2	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

hr.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
<i>WEDNESDAY 21.</i>				<i>FRIDAY 23.</i>			
	<i>h m s</i>	<i>° ' "</i>	<i>"</i>		<i>h m s</i>	<i>° ' "</i>	<i>"</i>
0	9 14 27.47	N. 12 47 13.3	131.87	0	10 59 20.55	N. 1 20 8.0	149.85
1	9 16 42.41	12 34 5.1	132.07	1	11 1 29.11	1 5 8.9	149.90
2	9 18 57.13	12 20 52.7	132.80	2	11 3 37.63	0 50 9.5	149.92
3	9 21 11.65	12 7 35.9	133.48	3	11 5 46.13	0 35 10.0	149.93
4	9 23 25.96	11 54 15.0	134.15	4	11 7 54.60	0 20 10.4	149.93
5	9 25 40.07	11 40 50.1	134.83	5	11 10 3.05	N. 0 5 10.8	149.92
6	9 27 53.98	11 27 21.1	135.48	6	11 12 11.48	S. 0 9 48.7	149.90
7	9 30 7.69	11 13 48.2	136.10	7	11 14 19.90	0 24 48.1	149.85
8	9 32 21.20	11 0 11.6	136.73	8	11 16 28.31	0 39 47.2	149.80
9	9 34 34.53	10 46 31.2	137.35	9	11 18 36.71	0 54 46.0	149.73
10	9 36 47.66	10 32 47.1	137.92	10	11 20 45.12	1 9 44.4	149.65
11	9 39 0.61	10 18 59.6	138.52	11	11 22 53.53	1 24 42.3	149.55
12	9 41 13.37	10 5 8.5	139.08	12	11 25 1.95	1 39 39.6	149.45
13	9 43 25.96	9 51 14.0	139.62	13	11 27 10.39	1 54 36.3	149.32
14	9 45 38.36	9 37 16.3	140.15	14	11 29 18.84	2 9 32.2	149.20
15	9 47 50.60	9 23 15.4	140.68	15	11 31 27.32	2 24 27.4	149.03
16	9 50 2.66	9 9 11.3	141.18	16	11 33 35.82	2 39 21.6	148.88
17	9 52 14.55	8 55 4.2	141.67	17	11 35 44.36	2 54 14.9	148.70
18	9 54 26.28	8 40 54.2	142.15	18	11 37 52.93	3 9 7.1	148.52
19	9 56 37.86	8 26 41.3	142.62	19	11 40 1.54	3 23 58.2	148.32
20	9 58 49.27	8 12 25.6	143.07	20	11 42 10.20	3 38 48.1	148.10
21	10 1 0.53	7 58 7.2	143.48	21	11 44 18.91	3 53 36.7	147.87
22	10 3 11.64	7 43 46.3	143.92	22	11 46 27.67	4 8 23.9	147.62
23	10 5 22.60	N. 7 29 22.8	144.32	23	11 48 36.48	S. 4 23 9.6	147.37
<i>THURSDAY 22.</i>				<i>SATURDAY 24.</i>			
0	10 7 33.42	N. 7 14 56.9	144.70	0	11 50 45.36	S. 4 37 53.8	147.10
1	10 9 44.10	7 0 28.7	145.08	1	11 52 54.30	4 52 36.4	146.82
2	10 11 54.64	6 45 58.2	145.43	2	11 55 3.32	5 7 17.3	146.52
3	10 14 5.06	6 31 25.6	145.78	3	11 57 12.41	5 21 56.4	146.20
4	10 16 15.35	6 16 50.9	146.12	4	11 59 21.58	5 36 33.6	145.88
5	10 18 25.51	6 2 14.2	146.45	5	12 1 30.83	5 51 8.9	145.55
6	10 20 35.55	5 47 35.5	146.78	6	12 3 40.17	6 5 42.2	145.20
7	10 22 45.48	5 32 55.1	147.05	7	12 5 49.60	6 20 13.4	144.83
8	10 24 55.29	5 18 12.8	147.30	8	12 7 59.12	6 34 42.4	144.47
9	10 27 5.00	5 3 29.0	147.58	9	12 10 8.75	6 49 9.2	144.07
10	10 29 14.60	4 48 43.5	147.82	10	12 12 18.48	7 3 33.6	143.67
11	10 31 24.10	4 33 56.6	148.07	11	12 14 28.31	7 17 55.6	143.25
12	10 33 33.51	4 19 8.2	148.28	12	12 16 38.26	7 32 15.1	142.82
13	10 35 42.83	4 4 18.5	148.50	13	12 18 48.33	7 46 32.0	142.38
14	10 37 52.06	3 49 27.5	148.68	14	12 20 58.51	8 0 46.3	141.92
15	10 40 1.21	3 34 35.4	148.87	15	12 23 8.82	8 14 57.8	141.45
16	10 42 10.29	3 19 42.2	149.02	16	12 25 19.26	8 29 6.5	140.97
17	10 44 19.28	3 4 48.1	149.18	17	12 27 29.83	8 43 12.3	140.47
18	10 46 28.21	2 49 53.0	149.32	18	12 29 40.53	8 57 15.1	139.97
19	10 48 37.07	2 34 57.1	149.45	19	12 31 51.38	9 11 14.9	139.48
20	10 50 45.88	2 20 0.4	149.55	20	12 34 2.36	9 25 11.5	138.90
21	52 54.62	2 5 3.1	149.65	21	12 36 13.49	9 39 4.9	138.35
	3.31	1 50 5.2	149.73	22	12 38 24.78	9 52 55.0	137.78
	11.96	1 35 6.8	149.80	23	12 40 36.21	10 6 41.7	137.22

DECEMBER, 1842.

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

hr.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	
<i>SUNDAY 25.</i>					<i>TUESDAY 27.</i>		
12	42 47 80	S. 10 20 25 0	186 62	0	14 31 58 00	S. 19 45 31 6	
12	44 59 55	10 34 4 7	186 02	1	14 34 19 91	19 54 49 9	
12	47 11 46	10 47 40 8	185 40	2	14 36 42 04	20 4 0 9	
12	49 23 53	11 1 13 2	184 77	3	14 39 4 40	20 13 4 6	
12	51 35 78	11 14 41 8	184 12	4	14 41 26 97	20 22 0 9	
12	53 48 20	11 28 6 5	183 47	5	14 43 49 77	20 30 49 7	
12	56 0 79	11 41 27 3	182 80	6	14 46 12 78	20 39 31 0	
12	58 13 57	11 54 44 1	182 13	7	14 48 36 00	20 48 4 8	
13	0 26 53	12 7 56 9	181 42	8	14 50 59 44	20 56 30 9	
13	2 39 67	12 21 5 4	180 72	9	14 53 23 08	21 4 49 3	
13	4 53 00	12 34 9 7	129 98	10	14 55 46 93	21 12 59 9	
13	7 6 52	12 47 9 6	129 27	11	14 58 10 99	21 21 2 7	
13	9 20 23	13 0 5 2	128 52	12	15 0 35 25	21 28 57 6	
13	11 34 14	13 12 56 3	127 75	13	15 2 59 71	21 36 44 5	
13	13 48 25	13 25 42 8	126 98	14	15 5 24 37	21 44 23 5	
13	16 2 56	13 38 24 7	126 20	15	15 7 49 21	21 51 54 3	
13	18 17 07	13 51 1 9	125 40	16	15 10 14 25	21 59 17 1	
13	20 31 79	14 3 34 3	124 57	17	15 12 39 48	22 6 31 7	
13	22 46 72	14 16 1 7	123 75	18	15 15 4 88	22 13 38 0	
13	25 1 86	14 28 24 2	122 92	19	15 17 30 47	22 20 36 1	
13	27 17 20	14 40 41 7	122 07	20	15 19 56 23	22 27 25 9	
13	29 32 77	14 52 54 1	121 18	21	15 22 22 16	22 34 7 3	
13	31 48 55	15 5 1 2	120 32	22	15 24 48 26	22 40 40 2	
13	34 4 54	S. 15 17 3 1	119 42	23	15 27 14 53	S. 22 47 4 7	
<i>MONDAY 26.</i>					<i>WEDNESDAY 28.</i>		
13	36 20 75	S. 15 28 59 6	118 52	0	15 29 40 95	S. 22 53 20 7	
13	38 37 18	15 40 50 7	117 58	1	15 32 7 53	22 59 28 1	
13	40 53 84	15 52 36 2	116 67	2	15 34 34 25	23 5 27 0	
13	43 10 71	16 4 16 2	115 72	3	15 37 1 12	23 11 17 1	
13	45 27 82	16 15 50 5	114 75	4	15 39 28 14	23 16 58 6	
13	47 45 14	16 27 19 0	113 78	5	15 41 55 28	23 22 31 4	
13	50 2 70	16 38 41 7	112 82	6	15 44 22 56	23 27 55 3	
13	52 20 48	16 49 58 6	111 80	7	15 46 49 96	23 33 10 5	
13	54 38 49	17 1 9 4	110 80	8	15 49 17 49	23 38 16 8	
13	56 56 73	17 12 14 2	109 78	9	15 51 45 13	23 43 14 3	
13	59 15 20	17 23 12 9	108 75	10	15 54 12 87	23 48 2 8	
14	1 33 90	17 34 5 4	107 72	11	15 56 40 73	23 52 42 4	
14	3 52 83	17 44 51 7	106 65	12	15 59 8 68	23 57 13 0	
14	6 11 99	17 55 31 6	105 58	13	16 1 36 73	24 1 34 6	
14	8 31 39	18 6 5 1	104 50	14	16 4 4 86	24 5 47 1	
14	10 51 01	18 16 32 1	103 42	15	16 6 33 07	24 9 50 6	
14	13 10 87	18 26 52 6	102 30	16	16 9 1 35	24 13 45 0	
14	15 30 96	18 37 6 4	101 18	17	16 11 29 71	24 17 30 2	
14	17 51 28	18 47 13 5	100 07	18	16 13 58 13	24 21 16 4	
14	20 11 82	18 57 13 9	98 92	19	16 16 26 54	24 25 0 2	
14	22 32 60	19 7 7 4	97 77	20	16 18 55 31	24 28 43 4	
14	24 53 61	19 16 54 0	96 60	21	16 21 24 04	24 32 36 0	
14	27 14 84	19 26 33 6	95 42	22	16 23 52 33	24 36 28 6	
14	29 36 31	19 36 6 1	94 25	23	16 26 20 58	24 40 20 2	
14	31 58 00	S. 19 45 31 6		24	16 28 49 19	24 44 11 8	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10 ^m .
THURSDAY 29.				SATURDAY 31.			
0	16 28 49 ^{h m s} 60	S. 24 39 30 ^{o / ' "} 7	25 30	0	18 26 3 37	S. 23 50 22 ^{o / ' "} 8	45 42
1	16 31 18 38	24 42 2 5	25 77	1	18 28 25 23	23 45 50 3	46 72
2	16 33 46 97	24 44 25 1	22 98	2	18 30 46 81	23 41 10 0	48 02
3	16 36 15 66	24 46 38 5	20 68	3	18 33 8 11	23 36 21 9	49 32
4	16 38 44 36	24 48 42 6	19 15	4	18 35 29 12	23 31 26 0	50 58
5	16 41 13 04	24 50 37 5	17 60	5	18 37 49 84	23 26 22 5	51 87
6	16 43 41 71	24 52 23 1	16 05	6	18 40 10 27	23 21 11 3	53 12
7	16 46 10 35	24 53 59 4	14 52	7	18 42 30 39	23 15 52 6	54 37
8	16 48 38 96	24 55 26 5	12 97	8	18 44 50 22	23 10 26 4	55 60
9	16 51 7 54	24 56 44 3	11 42	9	18 47 9 73	23 4 52 8	56 38
10	16 53 36 08	24 57 52 8	9 88	10	18 49 28 95	22 59 11 8	58 07
11	16 56 4 56	24 58 52 1	8 36	11	18 51 47 85	22 53 23 4	59 25
12	16 58 32 99	24 59 42 2	6 80	12	18 54 6 43	22 47 27 9	60 48
13	17 1 1 36	25 0 23 0	5 27	13	18 56 24 70	22 41 25 2	61 65
14	17 3 29 66	25 0 54 6	3 72	14	18 58 42 65	22 35 15 3	62 80
15	17 5 57 88	25 1 16 9	2 20	15	19 1 0 28	22 28 58 5	63 98
16	17 8 26 01	25 1 30 1	0 67	16	19 3 17 58	22 22 34 6	65 12
17	17 10 54 06	25 1 34 1	0 87	17	19 5 34 56	22 16 3 9	66 25
18	17 13 22 00	25 1 28 9	2 38	18	19 7 51 21	22 9 26 4	67 40
19	17 15 49 84	25 1 14 6	3 90	19	19 10 7 53	22 2 42 0	68 50
20	17 18 17 57	25 0 51 2	5 43	20	19 12 23 51	21 55 51 0	69 60
21	17 20 45 19	25 0 18 6	6 98	21	19 14 39 17	21 48 53 4	70 70
22	17 23 12 68	24 59 37 0	8 48	22	19 16 54 48	21 41 49 2	71 77
23	17 25 40 03	S. 24 58 46 4	9 95	23	19 19 9 46	S. 21 34 38 6	72 85
FRIDAY 30.				SUNDAY, JAN. 1, 1843.			
0	17 28 7 25	S. 24 57 46 7	11 43	0	19 21 24 10	S. 21 27 21 5	
1	17 30 34 32	24 56 38 1	12 95				
2	17 33 1 24	24 55 20 4	14 42				
3	17 35 28 01	24 53 53 9	15 90				
4	17 37 54 61	24 52 18 5	17 38				
5	17 40 21 04	24 50 34 2	18 87				
6	17 42 47 30	24 48 41 0	20 32				
7	17 45 13 37	24 46 39 1	21 78				
8	17 47 39 26	24 44 28 4	23 22				
9	17 50 4 95	24 42 9 1	24 68				
10	17 52 30 45	24 39 41 0	26 12				
11	17 54 55 74	24 37 4 3	27 55				
12	17 57 20 81	24 34 19 0	28 98				
13	17 59 45 67	24 31 25 1	30 38				
14	18 2 10 31	24 28 22 8	31 80				
15	18 4 34 73	24 25 12 0	33 20				
16	18 6 58 91	24 21 52 8	34 60				
17	18 9 22 85	24 18 25 2	35 97				
18	18 11 46 55	24 14 49 4	37 35				
19	18 14 10 00	24 11 5 3	38 72				
20	18 16 33 20	24 7 13 0	40 08				
	19 56 14	24 3 12 5	41 42				
	19 82	23 59 4 0	42 77				
		23 54 47 4	44 10				
		23 50 22 8					

PHASES OF THE MOON.

- New Moon - - 1 16 14 6
- ☾ First Quarter - 9 10 24 4
- Full Moon - - 17 6 46 0
- ☾ Last Quarter - 24 4 45 4
- New Moon - - 31 7 2 2

- ☾ Apogee - - - - - 9 18
- ☾ Perigee - - - - - 22 10

MEAN TIME.

LUNAR DISTANCES.

Day of the Month	Star's Name and Position.	Noon.			P. L. of diff.	III ^h .			P. L. of diff.	VI ^h .			P. L. of diff.	IX ^h .			P. L. of diff.
		°	'	"		°	'	"		°	'	"		°	'	"	
4	SUN W.	28	49	31	3018	30	19	21	3033	31	48	53	3048	33	18	6	3063
	Fomalhaut E.	53	52	12	3361	52	29	11	3408	51	7	3	3458	49	45	52	3511
	α Pegasi E.	71	40	5	2805	70	5	44	2824	68	31	47	2842	66	58	13	2860
	α Arietis E.	114	16	52	2668	112	39	29	2683	111	2	26	2696	109	25	41	2711
5	SUN W.	40	39	45	3136	42	7	11	3151	43	34	19	3166	45	1	9	3181
	Fomalhaut E.	43	15	57	3843	42	1	39	3925	40	48	45	4017	39	37	22	4101
	α Pegasi E.	59	16	34	2960	57	45	31	2981	56	14	55	3002	54	44	45	3023
	α Arietis E.	101	26	45	2782	99	51	54	2796	98	17	21	2810	96	43	6	2825
6	SUN W.	52	11	4	3251	53	36	13	3264	55	1	7	3277	56	25	46	3290
	Saturn W.	23	9	46	2910	24	41	52	2924	26	13	41	2935	27	45	15	2947
	α Pegasi E.	47	21	4	3147	45	53	51	3174	44	27	10	3203	43	1	4	3232
	α Arietis E.	88	56	16	2890	87	23	44	2903	85	51	29	2915	84	19	29	2927
7	SUN W.	63	25	26	3348	64	48	42	3359	66	11	46	3368	67	34	39	3377
	Saturn W.	35	19	26	3002	36	49	36	3013	38	19	33	3022	39	49	19	3031
	Jupiter W.	25	1	45	3047	26	31	0	3055	28	0	5	3065	29	28	58	3074
	α Pegasi E.	36	0	5	3414	34	38	4	3461	33	16	56	3510	31	56	43	3556
	α Arietis E.	76	43	9	2982	75	12	34	2992	73	42	11	3002	72	12	1	3012
	Aldebaran E.	109	22	57	3015	107	53	3	3025	106	23	21	3034	104	53	50	3044
8	SUN W.	74	26	27	3420	75	48	21	3426	77	10	8	3432	78	31	48	3438
	Saturn W.	47	15	29	3070	48	44	15	3077	50	12	53	3083	51	41	24	3089
	Jupiter W.	36	50	53	3111	38	18	49	3117	39	46	38	3123	41	14	20	3129
	α Arietis E.	64	43	53	3052	63	14	45	3059	61	45	45	3065	60	16	53	3071
	Aldebaran E.	97	28	37	3078	96	0	1	3083	94	31	31	3090	93	3	9	3096
9	SUN W.	85	18	39	3460	86	39	48	3462	88	0	54	3464	89	21	59	3467
	Saturn W.	59	2	31	3108	60	30	31	3111	61	58	27	3112	63	26	22	3114
	Jupiter W.	48	31	22	3148	49	58	33	3151	51	25	41	3153	52	52	47	3154
	α Aquilæ W.	47	24	54	4187	48	34	20	4090	49	44	31	4048	50	55	23	4010
	α Arietis E.	52	54	16	3096	51	26	2	3100	49	57	52	3103	48	29	46	3105
	Aldebaran E.	85	42	44	3118	84	14	53	3117	82	47	4	3120	81	19	19	3122
10	SUN W.	96	7	4	3466	97	28	6	3463	98	49	11	3462	100	10	18	3463
	Saturn W.	70	45	38	3118	72	13	30	3112	73	41	25	3111	75	9	21	3108
	Jupiter W.	60	8	3	3154	61	35	7	3152	63	2	13	3150	64	29	22	3148
	α Aquilæ W.	56	58	30	3851	58	12	40	3825	59	27	16	3800	60	42	18	3771
	α Arietis E.	41	10	0	3115	39	42	9	3117	38	14	20	3118	36	46	32	3113
	Aldebaran E.	74	0	56	3124	72	33	16	3124	71	5	36	3123	69	37	54	3122
	Pollux E.	115	52	41	3119	114	24	54	3116	112	57	4	3113	111	29	10	3110
11	SUN W.	106	56	51	3438	108	18	25	3431	109	40	6	3424	111	1	55	3418
	Saturn W.	82	30	3	3088	83	58	27	3083	85	26	57	3077	86	55	35	3071
	Jupiter W.	71	46	3	3128	73	13	39	3122	74	41	22	3117	76	9	11	3110
	α Aquilæ W.	67	3	14	3675	68	20	28	3656	69	38	2	3638	70	55	55	3622
	Fomalhaut W.	42	51	14	4086	44	1	29	4027	45	12	42	3970	46	24	51	3912
	α Arietis E.	29	27	49	3128	28	0	10	3128	26	32	34	3131	25	5	2	3131
	Aldebaran E.	62	18	49	3109	60	50	50	3105	59	22	46	3101	57	54	38	3095
Pollux E.	104	8	32	3087	102	40	7	3082	101	11	35	3078	99	43	3	3074	
12	SUN W.	117	53	2	3377	119	15	45	3368	120	38	38	3358	122	1	1	3348

MEAN TIME.
LUNAR DISTANCES.

Star's Name and Position.	Midnight.	P. L. of diff.	XV ^h .	P. L. of diff.	XVIII ^h .	P. L. of diff.	XXI ^h .	P. L. of diff.
	^o ['] ["]		^o ['] ["]		^o ['] ["]		^o ['] ["]	
SUN W.	34 47 2	3077	36 15 40	3092	37 44 0	3106	39 12 2	3122
Fomalhaut E.	48 25 40	3567	47 6 30	3630	45 48 28	3695	44 31 35	3766
α Pegasi E.	65 25 4	2880	63 52 19	2898	62 19 58	2919	60 48 4	2939
α Arietis E.	107 49 16	2726	106 13 10	2740	104 37 23	2753	103 1 54	2769
SUN W.	46 27 42	3195	47 53 57	3209	49 19 36	3223	50 45 38	3237
Fomalhaut E.	38 27 36	4224	37 19 33	4344	36 13 21	4479	35 9 10	4625
α Pegasi E.	53 15 3	3048	51 45 49	3071	50 17 4	3096	48 48 49	3120
α Arietis E.	95 9 10	2838	93 35 31	2851	92 2 9	2864	90 29 4	2877
5 SUN W.	57 50 10	3302	59 14 19	3318	60 38 15	3326	62 1 57	3337
Saturn W.	29 16 34	2989	30 47 38	2970	32 18 28	2981	33 49 4	2993
α Pegasi E.	41 35 33	3264	40 10 39	3298	38 46 23	3334	37 22 53	3372
α Arietis E.	82 47 44	2939	81 16 14	2950	79 44 58	2961	78 13 57	2972
7 SUN W.	68 57 21	3388	70 19 51	3395	71 42 13	3405	73 4 24	3412
Saturn W.	41 18 53	3039	42 48 17	3048	44 17 30	3056	45 46 34	3063
Jupiter W.	30 57 40	3082	32 26 12	3089	33 54 35	3097	35 22 48	3104
α Pegasi E.	30 37 32	3628	29 19 28	3697	28 2 38	3777	26 47 12	3867
α Arietis E.	70 42 2	3021	69 12 15	3029	67 42 38	3036	66 18 10	3045
Aldebaran E.	103 24 28	3050	101 55 17	3057	100 26 15	3065	98 57 22	3071
8 SUN W.	79 53 21	3444	81 14 48	3448	82 36 10	3453	83 57 27	3457
Saturn W.	53 9 49	3093	54 38 7	3097	56 6 20	3102	57 34 27	3105
Jupiter W.	42 41 55	3134	44 9 24	3138	45 36 48	3142	47 4 7	3145
α Arietis E.	58 48 9	3077	57 19 31	3083	55 51 1	3087	54 22 36	3092
Aldebaran E.	91 34 53	3100	90 6 43	3105	88 38 39	3108	87 10 39	3112
9 SUN W.	90 43 0	3467	92 4 1	3467	93 25 2	3467	94 46 3	3467
Saturn W.	64 54 14	3115	66 22 5	3115	67 49 56	3115	69 17 47	3115
Jupiter W.	54 19 51	3155	55 46 54	3155	57 13 57	3156	58 40 59	3154
α Aquilæ W.	52 6 53	3973	53 18 59	3940	54 31 38	3909	55 44 49	3879
α Arietis E.	47 1 43	3109	45 33 44	3110	44 5 47	3112	42 37 52	3114
Aldebaran E.	79 51 36	3124	78 23 55	3124	76 56 15	3124	75 28 35	3125
10 SUN W.	101 31 28	3456	102 52 41	3452	104 13 59	3447	105 35 23	3443
Saturn W.	76 37 21	3105	78 5 25	3102	79 33 32	3097	81 1 45	3093
Jupiter W.	65 56 34	3145	67 23 49	3141	68 51 9	3138	70 18 33	3133
α Aquilæ W.	61 57 44	3754	63 13 34	3733	64 29 46	3713	65 46 19	3693
α Arietis E.	35 18 45	3119	33 50 59	3121	32 23 15	3121	30 55 31	3123
Aldebaran E.	68 10 11	3119	66 42 25	3117	65 14 36	3115	63 46 44	3112
Pollux E.	110 1 13	3106	108 33 11	3102	107 5 4	3097	105 36 51	3092
11 SUN W.	112 23 51	3411	113 45 55	3403	115 8 8	3394	116 30 31	3387
Saturn W.	88 24 20	3065	89 53 14	3057	91 22 16	3049	92 51 28	3042
Jupiter W.	77 37 8	3103	79 5 14	3096	80 33 28	3089	82 1 51	3080
α Aquilæ W.	72 14 6	3605	73 32 35	3589	74 51 21	3573	76 10 25	3558
Fomalhaut W.	47 37 52	3871	48 51 41	3825	50 6 17	3783	51 21 37	3744
α Arietis E.	23 37 37	3143	22 10 19	3152	20 43 12	3165	19 16 21	3182
Aldebaran E.	56 26 25	3093	54 58 7	3088	53 29 43	3083	52 1 19	3078
Pollux E.	98 14 7	3061	96 45 10	3054	95 16 4	3047	93 46 49	3039
12 SUN	24 59	3338	124 48 27	3326	126 12 9	3315	127 36 3	3303

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.			P.L. of diff.	III ^h .			P.L. of diff.	VI ^h .			P.L. of diff.	IX ^h .			
		°	'	"		°	'	"		°	'	"		°	'	"	
12	Jupiter W.	83	30	25	3078	84	59	8	3063	86	28	3	3055	87	57	1	
	α Aquilæ W.	77	29	45	3544	78	49	21	3529	80	9	13	3515	81	29	21	
	Fomalhaut W.	52	37	38	3706	53	54	19	3670	55	11	38	3626	56	29	33	
	α Pegasi W.	29	44	2	3603	31	2	33	3543	32	22	10	3489	33	42	47	
	Aldebaran E.	50	32	37	3074	49	3	56	3069	47	35	8	3064	46	6	14	
	Pollux E.	92	17	24	3031	90	47	49	3022	89	18	3	3012	87	48	5	
13	Sun W.	129	0	11	3291	130	24	33	3279	131	49	9	3266	133	14	0	
	Saturn W.	106	22	33	2954	107	53	44	2942	109	25	10	2930	110	56	51	
	Jupiter W.	95	25	41	2992	96	56	4	2981	98	26	41	2969	99	57	33	
	α Aquilæ W.	88	13	41	3438	89	35	14	3426	90	57	1	3415	92	19	0	
	Fomalhaut W.	63	7	26	3463	64	28	32	3438	65	50	6	3413	67	12	8	
	α Pegasi W.	40	38	10	3249	42	3	21	3219	43	29	7	3190	44	55	28	
	Aldebaran E.	38	40	24	3040	37	11	1	3038	35	41	35	3037	34	12	6	
	Pollux E.	80	15	16	2982	78	44	3	2942	77	12	37	2930	75	40	56	
	Regulus E.	117	10	47	2928	115	39	4	2916	114	7	6	2905	112	34	53	
14	Jupiter W.	107	35	43	2894	109	8	9	2880	110	40	53	2868	112	13	53	
	α Aquilæ W.	99	11	47	3359	100	34	51	3352	101	58	3	3245	103	21	23	
	Fomalhaut W.	74	8	45	3232	75	33	17	3264	76	58	11	3244	78	23	25	
	α Pegasi W.	52	15	4	3041	53	44	26	3019	55	14	15	2998	56	44	30	
	Aldebaran E.	26	45	44	3072	25	17	0	3091	23	48	39	3116	22	20	49	
	Pollux E.	67	58	56	2860	66	25	46	2849	64	52	22	2837	63	18	42	
		Regulus E.	104	49	53	2829	103	16	3	2816	101	41	56	2803	100	7	32
15	Fomalhaut W.	85	35	5	3143	87	2	22	3128	88	29	57	3114	89	57	49	
	α Pegasi W.	64	22	2	2882	65	54	44	2864	67	27	49	2847	69	1	16	
	α Arietis W.	20	44	30	2845	22	18	0	2818	23	52	9	2787	25	26	54	
	Pollux E.	55	26	32	2767	53	51	21	2756	52	15	55	2745	50	40	15	
		Regulus E.	92	11	8	2733	90	34	58	2709	88	58	30	2696	87	21	44
16	Fomalhaut W.	97	21	0	3044	98	50	18	3035	100	19	48	3027	101	49	27	
	α Pegasi W.	76	53	54	2780	78	29	27	2736	80	5	19	2721	81	41	31	
	α Arietis W.	33	28	13	2660	35	5	47	2642	36	43	45	2625	38	22	6	
	Pollux E.	42	38	35	2688	41	1	39	2682	39	24	35	2675	37	47	21	
		Regulus E.	79	13	24	2616	77	34	51	2603	75	56	0	2591	74	16	52
17	Fomalhaut W.	109	19	30	3000	110	49	43	3001	112	19	55	3001	113	50	7	
	α Pegasi W.	89	46	55	2645	91	24	49	2633	93	2	59	2622	94	41	24	
	α Arietis W.	46	39	3	2527	48	19	25	2524	50	0	5	2511	51	41	3	
	Aldebaran W.	15	50	44	3167	17	17	33	3040	18	46	56	2942	20	18	22	
	Pollux E.	29	40	14	2669	28	2	53	2678	26	25	44	2690	24	48	51	
	Regulus E.	65	57	0	2519	64	16	13	2508	62	35	11	2497	60	53	54	
		Mars E.	121	48	48	2788	120	12	59	2725	118	36	52	2713	117	0	29
18	α Pegasi W.	102	56	44	2568	104	36	23	2561	106	16	11	2556	107	56	7	
	α Arietis W.	60	10	1	2443	61	52	35	2433	63	35	23	2424	65	18	24	
	Aldebaran W.	28	15	58	2626	29	54	18	2596	31	33	19	2570	33	12	55	
	Regulus E.	52	23	57	2439	50	41	18	2431	48	58	28	2424	47	15	27	
	Spica η E.	106	24	35	2427	104	41	38	2418	102	58	29	2408	101	15	6	
		Mars E.	108	54	27	2643	107	16	30	2632	105	38	18	2622	103	59	53
19	α Arietis W.	73	56	39	2373	75	40	52	2366	77	25						

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.		Midnight.			P.L. of diff.	XV ^a .			P.L. of diff.	XVIII ^a .			P.L. of diff.	XXI ^a .			P.L. of diff.
		°	'	"		°	'	"		°	'	"		°	'	"	
Jupiter	W.	89	26	25	3035	90	55	55	3025	92	25	37	3014	93	55	33	3004
α Aquilæ	W.	82	49	44	3488	84	10	22	3475	85	31	14	3462	86	52	20	3449
Fomalhaut	W.	57	48	3	3574	59	7	6	3544	60	26	42	3516	61	46	49	3489
α Pegasi	W.	35	4	18	3396	36	26	39	3355	37	49	47	3317	39	13	39	3283
Aldebaran	E.	44	37	15	3055	43	8	10	3050	41	38	59	3047	40	9	44	3043
Pollux	E.	86	17	56	2993	84	47	35	2984	83	17	2	2973	81	46	15	2963
SUN	W.	134	39	6	3241	136	4	27	3228	137	30	3	3214	138	55	56	3200
Saturn	W.	112	28	46	2906	114	0	57	2894	115	33	24	2881	117	6	7	2869
Jupiter	W.	101	28	39	2945	103	0	1	2932	104	31	39	2920	106	3	33	2907
α Aquilæ	W.	93	41	11	3394	95	3	34	3385	96	26	8	3375	97	48	53	3367
Fomalhaut	W.	68	34	37	3367	69	57	31	3345	71	20	51	3323	72	44	36	3303
α Pegasi	W.	46	22	22	3137	47	49	47	3111	49	17	44	3087	50	46	9	3063
Aldebaran	E.	32	42	41	3039	31	13	17	3043	29	43	57	3049	28	14	45	3058
Pollux	E.	74	9	2	2908	72	36	53	2896	71	4	29	2884	69	31	50	2873
Regulus	E.	111	2	25	2880	109	29	41	2868	107	56	41	2856	106	23	25	2843
Jupiter	W.	113	47	10	2842	115	20	44	2828	116	54	36	2814	118	28	46	2800
α Aquilæ	W.	104	44	50	3334	106	8	22	3330	107	31	59	3326	108	55	40	3324
Fomalhaut	W.	79	49	7	3209	81	15	6	3191	82	41	26	3174	84	8	6	3158
α Pegasi	W.	58	15	11	2957	59	46	18	2938	61	17	48	2918	62	49	44	2901
Aldebaran	E.	20	53	38	3194	19	27	22	3253	18	2	16	3335	16	38	45	3445
Pollux	E.	61	44	47	2813	60	10	36	2801	58	36	10	2790	57	1	29	2778
Regulus	E.	98	32	50	2776	96	57	51	2763	95	22	35	2749	93	47	0	2736
Fomalhaut	W.	91	25	58	3088	92	54	22	3076	94	23	1	3065	95	51	54	3054
α Pegasi	W.	70	35	5	2813	72	9	16	2797	73	43	48	2781	75	18	41	2766
α Arietis	W.	27	2	12	2738	28	38	1	2716	30	14	19	2697	31	51	3	2678
Pollux	E.	49	4	21	2724	47	28	13	2714	45	51	52	2705	44	15	19	2697
Regulus	E.	85	44	40	2669	84	7	18	2655	82	29	38	2642	80	51	40	2629
Fomalhaut	W.	103	19	15	3014	104	49	10	3008	106	19	13	3005	107	49	20	3002
α Pegasi	W.	83	18	0	2694	84	54	48	2681	86	31	54	2669	88	9	16	2656
α Arietis	W.	40	0	48	2594	41	39	51	2579	43	19	15	2564	44	58	59	2550
Pollux	E.	36	10	2	2666	34	32	37	2663	32	55	8	2664	31	17	40	2666
Regulus	E.	72	37	27	2566	70	57	45	2553	69	17	46	2542	67	37	31	2530
Fomalhaut	W.	115	20	14	3009	116	50	16	3016	118	20	9	3023	119	49	53	3035
α Pegasi	W.	96	20	2	2602	97	58	55	2593	99	38	0	2585	101	17	16	2576
α Arietis	W.	53	22	18	2487	55	3	50	2475	56	45	38	2464	58	27	42	2453
Aldebaran	W.	21	51	29	2798	23	26	0	2744	25	1	41	2699	26	38	23	2659
Pollux	E.	23	12	22	2732	21	36	25	2766	20	1	13	2812	18	27	1	2877
Regulus	E.	59	12	22	2477	57	30	36	2467	55	48	36	2458	54	6	23	2448
Mars	E.	115	23	48	2687	113	46	51	2676	112	9	39	2668	110	32	10	2653
α Pegasi	W.	109	36	11	2544	111	16	23	2540	112	56	40	2538	114	37	1	2534
α Arietis	W.	67	1	39	2405	68	45	6	2396	70	28	46	2389	72	12	37	2381
Aldebaran	W.	34	53	4	2525	36	33	43	2507	38	14	47	2489	39	56	16	2478
Regulus	E.	45	32	15	2409	43	48	53	2403	42	5	22	2397	40	21	43	2391
Spica η	E.	99	31	31	2391	97	47	44	2384	96	3	46	2375	94	19	36	2368
β	E.	102	21	16	2603	100	42	25	2595	99	3	23	2586	97	24	9	2579
γ	E.	54	28		2348	52	39	18	2342	54	24	16	2337	56	9	22	2333

MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.			P. L. of diff.	III ^h .			P. L. of diff.	VI ^h .			P. L. of diff.	IX ^h .			
		°	'	"		°	'	"		°	'	"		°	'	"	
19	Aldebaran W.	41	38	7	2459	43	20	18	2446	45	2	48	2434	46	45	35	
	Regulus E.	38	37	56	2387	36	54	2	2383	35	10	3	2380	33	25	59	
	Spica π E.	92	35	16	2362	90	50	46	2355	89	6	6	2348	87	21	16	
	Mars E.	95	44	45	2571	94	5	10	2564	92	25	25	2557	90	45	31	
20	α Arietis W.	87	54	34	2328	89	39	53	2324	91	25	17	2320	93	10	47	
	Aldebaran W.	55	23	4	2378	57	7	10	2372	58	51	25	2366	60	35	48	
	Pollux W.	14	42	42	2909	16	14	49	2791	17	49	29	2702	19	26	61	
	Regulus E.	24	45	23	2385	23	1	26	2392	21	17	40	2403	19	34	10	
	Spica π E.	78	35	10	2318	76	49	36	2313	75	3	56	2310	73	18	11	
	Mars E.	82	24	0	2525	80	43	21	2521	79	2	37	2517	77	21	47	
21	α Arietis W.	101	59	23	2305	103	45	15	2303	105	31	10	2302	107	17	71	
	Aldebaran W.	69	19	35	2340	71	4	37	2336	72	49	44	2335	74	34	53	
	Pollux W.	27	46	44	2455	29	29	1	2436	31	11	45	2419	32	54	52	
	Spica π E.	64	28	21	2295	62	42	14	2293	60	56	4	2292	59	9	53	
	Mars E.	68	56	41	2503	67	15	32	2502	65	34	22	2501	63	53	10	
	SUN E.	132	5	29	2611	130	26	49	2609	128	48	6	2607	127	9	21	
22	Aldebaran W.	83	21	18	2326	85	6	39	2326	86	52	0	2327	88	37	20	
	Pollux W.	41	34	30	2362	43	18	59	2357	45	3	35	2353	46	48	18	
	Spica π E.	50	18	44	2291	48	32	31	2292	46	46	19	2292	45	0	8	
	Mars E.	55	27	14	2505	53	46	7	2506	52	5	2	2509	50	24	1	
	SUN E.	118	55	11	2602	117	16	19	2603	115	37	28	2603	113	58	37	
23	Aldebaran W.	97	23	46	2333	99	8	58	2335	100	54	6	2337	102	39	11	
	Pollux W.	55	32	53	2340	57	17	55	2339	59	2	58	2338	60	48	2	
	Regulus W.	18	35	26	2396	20	19	7	2381	22	3	9	2369	23	47	29	
	Spica π E.	36	9	53	2305	34	24	1	2309	32	38	14	2312	30	52	32	
	Mars E.	42	0	5	2533	40	19	37	2538	38	39	17	2546	36	59	7	
	SUN E.	105	44	35	2608	104	5	51	2610	102	27	10	2612	100	48	31	
24	Pollux W.	69	33	10	2342	71	18	8	2345	73	3	2	2346	74	47	55	
	Regulus W.	32	31	24	2340	34	16	25	2340	36	1	27	2340	37	46	29	
	Spica π E.	22	6	1	2351	20	21	16	2363	18	36	48	2377	16	52	41	
	Mars E.	28	41	28	2612	27	2	49	2630	25	24	35	2652	23	46	50	
	SUN E.	92	35	57	2624	90	57	35	2628	89	19	18	2630	87	41	4	
25	Pollux W.	83	31	28	2361	85	15	59	2364	87	0	26	2367	88	44	48	
	Regulus W.	46	31	29	2345	48	16	23	2347	50	1	14	2350	51	46	1	
	SUN E.	79	30	54	2649	77	53	5	2652	76	15	21	2655	74	37	41	
26	Pollux W.	97	25	23	2389	99	9	13	2394	100	52	56	2398	102	36	33	
	Regulus W.	60	29	0	2367	62	13	22	2371	63	57	39	2374	65	41	51	
	SUN E.	66	30	40	2680	64	53	33	2684	63	16	31	2688	61	39	35	
27	Regulus W.	74	21	24	2400	76	4	59	2404	77	48	28	2410	79	31	49	
	Spica π W.	20	23	19	2437	22	6	1	2436	23	48	45	2435	25	31	30	
	SUN E.	53	36	29	2717	52	0	12	2723	50	24	3	2729	48	48	1	
28	Regulus W.	88	6	40	2443	89	49	13	2449	91	31	38	2456	93	13	53	
	Spica π W.	34	4	33	2451	35	46	55	2456	37	29	10	2460	39	11	19	
	SUN E.	40	49	47	2765	39	14	34	2772	37	39	2				34	

MEAN TIME.

LUNAR DISTANCES.

Star's Name and Position.	Midnight.			P.L. of diff.	XV ^h .			P.L. of diff.	XVIII ^h .			P.L. of diff.	XXI ^h .			P.L. of diff.
	°	'	"		°	'	"		°	'	"		°	'	"	
Aldebaran W.	48	28	38	2412	50	11	55	2403	51	55	26	2394	53	39	9	2386
Regulus E.	31	41	52	2376	29	57	43	2376	28	13	34	2377	26	29	26	2380
Spica ♀ E.	85	36	19	2336	83	51	12	2332	82	5	59	2326	80	20	38	2322
Mars E.	89	5	29	2844	87	25	17	2539	85	44	58	2834	84	4	32	2830
α Arietis W.	94	56	22	2313	96	42	2	2311	98	27	46	2309	100	13	33	2307
Aldebaran W.	62	20	20	2355	64	5	0	2351	65	49	46	2346	67	34	38	2343
Pollux W.	21	4	15	2582	22	43	35	2540	24	23	53	2505	26	4	59	2477
Regulus E.	17	51	3	2441	16	8	27	2473	14	26	36	2520	12	45	50	2590
Spica ♀ E.	71	32	21	2303	69	46	26	2301	68	0	28	2298	66	14	26	2296
Mars E.	75	40	53	2511	73	59	55	2508	72	18	53	2507	70	37	49	2504
α Arietis W.	109	3	4	2300	110	49	3	2300	112	35	2	2300	114	21	2	2301
Aldebaran W.	76	20	6	2331	78	5	21	2328	79	50	39	2328	81	35	58	2327
Pollux W.	34	38	19	2394	36	22	2	2384	38	6	0	2375	39	50	10	2368
Spica ♀ E.	57	23	40	2291	55	37	27	2289	53	51	12	2290	52	4	58	2290
Mars E.	62	11	58	2500	60	30	45	2501	58	49	33	2502	57	8	23	2503
SUN E.	125	30	33	2604	123	51	44	2604	122	12	54	2603	120	34	3	2602
2 Aldebaran W.	90	22	40	2328	92	7	59	2329	93	53	16	2330	95	38	32	2331
Pollux W.	48	33	6	2346	50	17	58	2344	52	2	54	2342	53	47	52	2340
Spica ♀ E.	43	14	0	2295	41	27	53	2298	39	41	50	2300	37	55	50	2302
Mars E.	48	43	4	2515	47	2	11	2518	45	21	23	2522	43	40	41	2527
SUN E.	112	19	46	2604	110	40	56	2605	109	2	8	2606	107	23	21	2607
3 Aldebaran W.	104	24	13	2343	106	9	10	2345	107	54	4	2348	109	38	53	2351
Pollux W.	62	33	5	2339	64	18	8	2340	66	3	10	2340	67	48	11	2341
Regulus W.	25	32	1	2353	27	16	43	2348	29	1	32	2345	30	46	26	2342
Spica ♀ E.	29	6	57	2322	27	21	29	2327	25	36	9	2334	23	50	59	2342
Mars E.	35	19	7	2562	33	39	20	2572	31	59	46	2583	30	20	28	2596
SUN E.	99	9	54	2615	97	31	20	2618	95	52	49	2620	94	14	21	2623
4 Pollux W.	76	32	44	2351	78	17	30	2353	80	2	13	2355	81	46	53	2358
Regulus W.	39	31	32	2340	41	16	34	2341	43	1	34	2342	44	46	33	2344
Spica ♀ E.	15	9	2	2422	13	25	59	2457	11	43	46	2511	10	2	48	2595
Mars E.	22	9	39	2709	20	33	11	2747	18	57	34	2798	17	23	4	2862
SUN E.	86	2	53	2636	84	24	47	2639	82	46	45	2642	81	8	47	2646
25 Pollux W.	90	29	6	2374	92	13	18	2377	93	57	26	2382	95	41	27	2382
Regulus W.	53	30	45	2355	55	15	25	2357	57	0	1	2360	58	44	33	2364
SUN E.	73	0	7	2663	71	22	37	2667	69	45	13	2671	68	7	54	2675
26 Pollux W.	104	20	3	2408	106	3	26	2414	107	46	41	2419	109	29	49	2424
Regulus W.	67	25	58	2382	69	9	59	2387	70	53	53	2390	72	37	42	2392
SUN E.	60	2	45	2697	58	26	1	2702	56	49	24	2707	55	12	53	2715
27 Regulus W.	81	15	3	2420	82	58	9	2426	84	41	7	2431	86	23	58	2437
Spica ♀ W.	27	14	13	2438	28	56	54	2440	30	39	32	2443	32	22	5	2447
SUN E.	47	12	6	2740	45	36	19	2746	44	0	40	2753	42	25	10	2755
28 Regulus W.	94	55	59	2469	96	37	56	2477	98	19	42	2483	100	1	19	2491
Spica ♀ W.	40	53	19	2472	42	35	12	2478	44	16	56	2485	45	58	31	2491
SUN E.	34	29	47	2794	32	55	11	2801	31	20	44	2808	29	46	27	2811


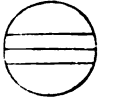
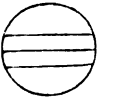
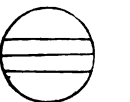
CONFIGURATIONS OF THE SATELLITES OF JUPITER

At 4^h 45^m, MEAN TIME.

Day of the Month.	West.	East.
1	4° 3° .1	○
2	4° 3° .2	○ 1°
3	4° .3	○ .10 .2
4	.4	1° ○ 2°
5	.4	2° ○ .1 .3
6	.4	1° .2 ○ 3°
7	.4	○ .1 .3 .2
8	.4	2° .1 ○ 2°
9	3° .2	○ 1° .4
10	.3	.1 ○ .2 .4
11	1° ○	.3 ○ 2° .4
12		2° ○ .1 .3 4°
13		.2 1° ○ 3° 4°
14		○ .1 .2 .3 4°
15		.1 3° ○ 2° 4°
16	3° 2°	○ 4° .1
17	.3	4° .1 ○
18	4°	.3 ○ 1° 2°
19	4°	2° ○ .3
20	4°	.2 1° ○ 3°
21	.4	○ .1 .2 3°
22	.4	1° ○ 2°
23	.4 3° 2°	○ 1°
24	.3	.4 .1 .2 ○
25	.4 ●	.3 ○ 1° 2°
26		2° .1 ○ .3 .4
27	1° ○	.2 ○ .3 .4
28		○ .1 .2 3° 4°
29		1° ○ 3° 2° 4°
30	3° 2°	○ .1 4°
31	.3	.1 .2 ○ 4°

This Table represents, at 4^h 45^m after *Mean Noon* of each day of the month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the field of view, the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the numeral. A white circle (○) at the left or right hand of the page, denotes that the Satellite is either in front of or behind the disc of Jupiter, and a black circle (●) that it is either in front of or behind Jupiter.

ECLIPSES OF THE SATELLITES OF JUPITER.

SATELLITE.	Day of the Month.	Mean Time.			Sidereal Time.			PHASE as seen in an inverting Telescope.	
		h	m	s	h	m	s		
I.	1	13	41	53.9	6	23	52.6	Em.	
	3	8	10	36.4	0	59	33.8	Em.	
	5	2	39	20.2	19	35	16.3	Em.	
	6	21	8	2.0	14	10	56.8	Em.	
	8	15	36	47.2	8	46	40.7	Em.	
	10	10	5	28.7	3	22	20.9	Em.	
	12†	4	34	11.0	21	58	1.9	Em.	
	13	23	2	51.4	16	33	41.0	Em.	
	15	17	31	35.2	11	9	23.4	Em.	
	17	12	0	15.5	5	45	2.4	Em.	
	19	6	28	56.3	0	20	41.9	Em.	
	21	0	57	35.4	18	56	19.7	Em.	
	22	19	26	17.5	13	32	0.5	Em.	
	24	13	54	56.7	8	7	38.3	Em.	
	26	8	23	35.9	2	43	16.3	Em.	
	28	2	52	13.8	21	18	52.9	Em.	
29	21	20	54.2	15	54	31.9	Em.		
31	15	49	32.0	10	30	8.4	Em.		
II.	3	2	6	59.4	18	54	57.0	Em.	
	6	15	25	27.6	8	27	26.1	Em.	
	10†	4	44	47.9	22	0	47.4	Em.	
	13	18	3	15.8	11	33	16.1	Em.	
	17	7	22	39.3	1	6	40.7	Em.	
	20	20	41	6.4	14	39	8.6	Em.	
	24	10	0	31.8	4	12	34.9	Em.	
	27	23	18	57.5	17	45	1.5	Em.	
31	12	38	23.8	7	18	28.8	Em.		
III.	4	9	8	4.0	2	1	7.4	Em.	
	11	13	8	53.5	6	30	12.4	Em.	
	18	17	9	49.0	10	59	23.3	Em.	
	25	21	10	8.9	15	27	58.6	Em.	
IV.	8	10	37	13.7	3	46	18.0	Im.	
	8	14	52	41.5	8	2	27.7	Em.	
	25†	4	43	37.6	22	58	45.3	Im.	
	25	9	3	25.4	3	19	15.7	Em.	

APPROXIMATE SIDEREAL TIMES
OF THE
OCCULTATIONS OF JUPITER'S SATELLITES BY JUPITER,
AND OF THE
TRANSITS OF THE SATELLITES AND THEIR SHADOWS
OVER THE DISC OF THE PLANET.

Satellite.	OCCULTATIONS.			TRANSITS OF SATELLITES.			TRANSITS OF SHADOWS.		
	Immersion.	Emersion.		Ingress.	Egress.		Ingress.	Egress.	
	d h m	d h m		d h m	d h m		d h m	d h m	
I.	1 3 12			2 0 26	2 2 46		2 1 19	2 3 38	
	3* 21 50			4 19 3	4† 21 23		4 19 55	4* 22 38	
	4 16 27			5 13 41	5 16 0		5 14 30	5 16 38	
	6 11 4			7 8 18	7 10 38		7 9 6	7 11 38	
	8 5 41			9 2 55	9 5 15		9 3 42	9 6 38	
	10 0 19			11† 21 33	11 23 53		11* 22 18	11 0 38	
	12 18 56		In	12 16 10	13 18 30		12 16 54	13 19 11	
	13 13 33			14 10 48	14 13 8		14 11 30	14 13 51	
	15 8 10		the	16 5 25	16 7 45		16 6 5	16 8 25	
	17 2 48			18 0 2	18 2 22		18 0 41	18 3 11	
	19 21 25		Shadow.	20 18 40	20 21 0		20 19 17	20 21 57	
	20 16 3			21 13 18	21 15 37		21 13 53	21 16 11	
	22 10 40			23 7 55	23 10 15		23 8 28	23 10 43	
	24 5 17			25 2 33	25 4 53		25 3 4	25 5 23	
	26† 23 55			27 21 10	27† 23 30		27 21 40	27† 0 0	
	28 18 32			28 15 48	28 18 8		28 16 16	29 18 36	
29 13 10			30 10 25	30 12 45		30 10 51	30 13 12		
31 7 47									
II.	2 14 14			1 19 50	1† 22 46		1* 21 39	1 0 36	
	6 3 53			4 9 28	4 12 24		4 11 11	4 14 8	
	10 17 32		In	8† 23 6	8 2 2		8 0 43	8 3 48	
	13 7 11			11 12 44	11 15 40		11 14 15	11 17 11	
	17 20 51		the	15 2 22	15 5 18		15 3 46	15 6 43	
	20 10 30			18 16 1	19 18 57		18 17 18	19 20 13	
	24 0 11		Shadow.	22 5 40	22 8 36		22 6 50	22 9 47	
	27 13 50			26 19 18	26† 22 15		26 20 21	26† 23 15	
31 3 31			29 8 57	29 11 53		29 9 53	29 12 56		
III.	4 19 1			7 9 35	7 13 9		7 12 49	7 16 27	
	11 23 56		In the	14 14 30	15 18 5		14 17 18	15 20 56	
	18 4 51			22 19 27	22† 23 2		22 21 47	22 1 26	
	25 9 48		Shadow.	29 0 25	29 4 1		29 0 0	29 4 1	
IV.	8 20 19			16 8 37	16				
	24 17 58		8 0 28 25† 22 16						

Day of the Month.	For correcting the Places of the Fixed Stars.				Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0 ^s .567309.	From Mean Noon of January 1.		
	At Mean Midnight,						Days.	Day of the Year.	Fraction of the Year.
	A	B	C	D					
1	+0.8167	+1.2802	+0.0907	-0.2503	7 19 4.20	253	334	.914	
2	0.7956	1.2830	0.0919	0.2454	7 15 8.28	254	335	.917	
3	0.7732	1.2857	0.0931	0.2404	7 11 12.37	255	336	.920	
4	+0.7495	+1.2882	+0.0944	-0.2355	7 7 16.46	256	337	.923	
5	0.7243	1.2905	0.0956	0.2306	7 3 20.55	257	338	.925	
6	0.6974	1.2927	0.0968	0.2259	6 59 24.64	258	339	.928	
7	+0.6686	+1.2948	+0.0981	-0.2212	6 55 28.72	259	340	.931	
8	0.6376	1.2967	0.0993	0.2167	6 51 32.81	260	341	.934	
9	0.6040	1.2985	0.1006	0.2123	6 47 36.90	261	342	.936	
10	+0.5674	+1.3001	+0.1018	-0.2080	6 43 40.99	262	343	.939	
11	0.5273	1.3016	0.1031	0.2038	6 39 45.08	263	344	.942	
12	0.4830	1.3030	0.1043	0.1997	6 35 49.16	264	345	.945	
13	+0.4335	+1.3042	+0.1056	-0.1958	6 31 53.25	265	346	.947	
14	0.3775	1.3052	0.1068	0.1921	6 27 57.34	266	347	.950	
15	0.3129	1.3061	0.1081	0.1885	6 24 1.43	267	348	.953	
16	+0.2369	+1.3069	+0.1093	-0.1851	6 20 5.52	268	349	.956	
17	0.1445	1.3076	0.1105	0.1818	6 16 9.60	269	350	.958	
18	0.0268	1.3081	0.1118	0.1787	6 12 13.69	270	351	.961	
19	+9.8645	+1.3085	+0.1130	-0.1758	6 8 17.78	271	352	.964	
20	9.6023	1.3087	0.1143	0.1730	6 4 21.87	272	353	.966	
21	+8.8340	1.3088	0.1155	0.1704	6 0 25.95	273	354	.969	
22	-9.4214	+1.3087	+0.1167	-0.1680	5 56 30.04	274	355	.972	
23	9.7752	1.3085	0.1180	0.1658	5 52 34.13	275	356	.975	
24	9.9675	1.3082	0.1192	0.1639	5 48 38.22	276	357	.977	
25	-0.1002	+1.3078	+0.1204	-0.1621	5 44 42.30	277	358	.980	
26	0.2016	1.3072	0.1216	0.1605	5 40 46.39	278	359	.983	
27	0.2837	1.3065	0.1228	0.1591	5 36 50.48	279	360	.986	
28	-0.3526	+1.3056	+0.1240	-0.1578	5 32 54.57	280	361	.988	
29	0.4119	1.3046	0.1252	0.1568	5 28 58.65	281	362	.991	
30	0.4640	1.3034	0.1264	0.1560	5 25 2.74	282	363	.994	
31	0.5103	1.3021	0.1276	0.1554	5 21 6.83	283	364	.997	
	.21	+1.3007	+0.1288	-0.1550	5 17 10.92	284	365	.999	

66 OBLIQUITY OF THE ECLIPTIC, &c.

1842.	Apparent Obliquity.	The Sun's		Equation of Equinoxes.		Mean Longitude of C's ascending Node.
		Horizontal Parallax.	Aberration.	In Long.	In A.R. (in time.)	
Jan. 1	23° 27' 39" 89	8" 72	-20" 71	+15" 12	+0" 93	300° 53' 6"
11	39" 91	8" 72	20" 70	15" 58	0" 95	300° 22' 1"
21	39" 98	8" 71	20" 69	15" 94	0" 98	299° 50' 3"
Feb. 31	23° 27' 40" 07	8" 70	20" 66	16" 15	0" 99	299° 18' 5"
10	40" 18	8" 69	20" 62	16" 21	0" 99	298° 46' 7"
20	40" 27	8" 67	20" 58	16" 12	0" 99	298° 15' 0"
March 2	23° 27' 40" 32	8" 65	20" 53	15" 90	0" 97	297° 43' 2"
12	40" 32	8" 63	20" 47	15" 59	0" 95	297° 11' 4"
22	40" 25	8" 60	20" 42	15" 23	0" 93	296° 39' 4"
April 1	23° 27' 40" 13	8" 58	20" 36	14" 88	0" 91	296° 7' 9"
11	39" 94	8" 55	20" 30	14" 59	0" 89	295° 36' 1"
21	39" 70	8" 53	20" 24	14" 40	0" 88	295° 4' 3"
May 1	23° 27' 39" 44	8" 51	20" 19	14" 34	0" 88	294° 32' 6"
11	39" 17	8" 49	20" 14	14" 41	0" 88	294° 0' 8"
21	38" 91	8" 47	20" 11	14" 63	0" 89	293° 29' 0"
June 31	23° 27' 38" 68	8" 46	20" 07	14" 96	0" 92	292° 57' 2"
10	38" 49	8" 45	20" 05	15" 38	0" 94	292° 25' 5"
20	38" 36	8" 44	20" 03	15" 85	0" 97	291° 53' 7"
July 30	23° 27' 38" 29	8" 44	20" 02	16" 32	1" 00	291° 21' 9"
10	38" 28	8" 44	20" 03	16" 76	1" 03	290° 50' 1"
20	38" 32	8" 44	20" 04	17" 11	1" 05	290° 18' 4"
Aug. 30	23° 27' 38" 39	8" 45	20" 06	17" 35	1" 06	289° 46' 6"
9	38" 48	8" 46	20" 09	17" 46	1" 07	289° 14' 8"
19	38" 56	8" 48	20" 13	17" 42	1" 07	288° 43' 1"
Sept. 29	23° 27' 38" 63	8" 50	20" 17	17" 25	1" 06	288° 11' 3"
8	38" 65	8" 52	20" 22	16" 98	1" 04	287° 39' 5"
18	38" 62	8" 54	20" 28	16" 63	1" 02	287° 7' 7"
Oct. 28	23° 27' 38" 52	8" 57	20" 33	16" 25	0" 99	286° 36' 0"
8	38" 37	8" 59	20" 39	15" 89	0" 97	286° 4' 2"
18	38" 15	8" 62	20" 45	15" 61	0" 96	285° 32' 4"
Nov. 28	23° 27' 37" 90	8" 64	20" 51	15" 43	0" 94	285° 0' 6"
7	37" 62	8" 66	20" 56	15" 39	0" 94	284° 28' 9"
17	37" 34	8" 68	20" 61	15" 51	0" 95	283° 57' 1"
Dec. 27	23° 27' 37" 07	8" 70	20" 64	15" 77	0" 96	283° 25' 3"
7	36" 86	8" 71	20" 68	16" 15	0" 99	282° 53' 6"
17	36" 69	8" 72	20" 70	16" 60	1" 02	282° 21' 8"
27	23° 27' 36" 60	8" 72	20" 71	17" 08	1" 04	281° 50' 0"
37	23° 27' 36" 57	8" 72	-20" 71	+17" 53	+1" 07	281° 18' 2"

Mean Obliquity, Jan. 1, 1842 = 23° 27' 39" 89

EPHEMERIS
OF
THE PLANETS.

JANUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	o ' " S.		h m	o ' " W.	o ' " S.	
1	18 5 40.64	S. 21 25 25.3	0.1483073	23 25.6	251 2 18.7	S. 2 55 35.4	9.6687899
2	18 12 30.81	24 29 45.8	.1498111	23 28.5	253 46 57.0	3 13 43.2	.6690170
3	18 19 22.97	24 32 47.3	.1511450	23 31.5	256 31 37.2	3 31 24.0	.6698947
4	18 26 16.97	24 34 28.3	.1523102	23 34.5	259 16 30.4	3 48 36.5	.6686921
5	18 33 12.70	24 34 47.4	.1533090	23 37.5	262 1 49.5	4 5 19.4	.6681399
6	18 40 10.08	24 33 43.8	.1541419	23 40.6	264 47 46.5	4 21 31.3	.6673267
7	18 47 8.98	24 31 16.1	.1548098	23 43.6	267 34 34.2	4 37 10.9	.6662321
8	18 54 9.30	24 27 23.5	.1553122	23 46.7	270 22 24.7	4 52 16.3	.6649162
9	19 1 10.93	24 22 4.6	.1556485	23 49.8	273 11 31.2	5 6 45.8	.6633170
10	19 8 13.76	24 15 18.7	.1558180	23 53.0	276 2 6.2	5 20 37.4	.6614355
11	19 15 17.65	24 7 4.6	.1558181	23 56.1	278 54 23.3	5 33 48.9	.6593288
12	19 22 22.53	23 57 21.5	.1556472	23 59.3	281 48 36.1	5 46 17.9	.6569366
13	19 29 28.24	23 46 8.5	.1553026	* *	284 44 58.7	5 58 1.6	.6542779
14	19 36 34.67	23 33 25.0	.1547799	0 2.4	287 43 45.6	6 8 57.3	.6513517
15	19 43 41.71	23 19 10.0	.1540759	0 5.6	290 45 11.9	6 19 1.5	.6481578
16	19 50 49.22	23 3 22.9	.1531852	0 8.8	293 49 33.5	6 28 10.7	.6446951
17	19 57 57.08	22 46 3.2	.1521019	0 12.0	296 57 6.1	6 36 20.9	.6409634
18	20 5 5.15	22 27 10.3	.1508201	0 15.2	300 8 6.7	6 43 27.9	.6369631
19	20 12 13.28	22 6 43.7	.1493322	0 18.4	303 22 52.9	6 49 26.9	.6326934
20	20 19 21.33	21 44 43.0	.1476304	0 21.6	306 41 42.8	6 54 12.7	.6281612
21	20 26 29.14	21 21 8.3	.1457048	0 24.8	310 4 55.8	6 57 39.6	.6233642
22	20 33 36.53	20 55 59.1	.1435456	0 28.0	313 32 51.0	6 59 41.6	.6183076
23	20 40 43.30	20 29 15.7	.1411414	0 31.2	317 6 48.6	7 0 12.0	.6129966
24	20 47 49.25	20 0 58.8	.1384801	0 34.3	320 44 9.8	6 59 3.8	.6074386
25	20 54 54.14	19 31 8.3	.1355473	0 37.5	324 28 16.3	6 56 9.3	.6016428
26	21 1 57.74	18 59 45.2	.1323282	0 40.6	328 18 30.0	6 51 20.7	.5956214
27	21 8 59.71	18 26 50.7	.1288068	0 43.7	332 15 13.3	6 44 29.4	.5893894
28	21 15 59.73	17 52 26.4	.1249653	0 46.7	336 18 48.7	6 35 27.0	.5829661
29	21 22 57.42	17 16 34.2	.1207844	0 49.8	340 29 38.8	6 24 4.8	.5756214
30	21 29 52.33	16 39 16.6	.1162440	0 52.7	344 48 5.4	6 10 14	
31	21 36 43.96	16 0 37.0	.1113224	0 55.7	349 14 29.7		
32	21 43 31.70	S. 15 20 39.1	0.1059968	0 58.5	353 49 11.2		

JANUARY, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 18 ^m 12 ^s 20·98	+17·16	0·17	S. 24° 29' 40"·5	- 9·3	2·3	6·1
2	18 19 13·94	17·25	0·17	24 32 44·1	6·0	2·3	6·1
3	18 26 8·75	17·32	0·17	24 34 27·1	- 2·6	2·3	6·0
4	18 33 5·31	17·39	0·17	24 34 47·8	+ 0·9	2·3	6·0
5	18 40 3·55	17·46	0·17	24 33 45·4	4·4	2·3	6·0
6	18 47 3·31	17·52	0·17	24 31 18·7	7·9	2·3	6·0
7	18 54 4·51	17·58	0·17	24 27 26·6	11·5	2·3	6·0
8	19 1 7·03	17·63	0·17	24 22 7·9	15·1	2·3	6·0
9	19 8 10·76	17·68	0·17	24 15 21·9	18·8	2·3	6·0
10	19 15 15·58	17·72	0·17	24 7 7·2	22·5	2·3	6·0
11	19 22 21·38	17·76	0·17	23 57 23·2	26·2	2·3	6·0
12	19 29 28·02	17·79	0·17	23 46 8·8	30·0	2·3	6·0
13	* * *	*	*	* * *	*	*	*
14	19 36 35·39	17·82	0·17	23 33 23·6	33·8	2·3	6·0
15	19 43 43·37	17·84	0·17	23 19 6·5	37·6	2·3	6·0
16	19 50 51·83	17·86	0·17	23 3 16·8	41·5	2·3	6·0
17	19 58 0·65	17·87	0·17	22 45 54·2	45·4	2·3	6·0
18	20 5 9·67	17·88	0·17	22 26 57·9	49·3	2·3	6·1
19	20 12 18·75	17·88	0·17	22 6 27·4	53·2	2·3	6·1
20	20 19 27·74	17·87	0·17	21 44 22·5	57·2	2·3	6·1
21	20 26 36·50	17·86	0·17	21 20 43·1	61·1	2·3	6·1
22	20 33 44·82	17·84	0·17	20 55 28·9	65·1	2·3	6·2
23	20 40 52·52	17·81	0·17	20 28 40·0	69·0	2·3	6·2
24	20 47 59·38	17·77	0·17	20 0 17·2	72·9	2·3	6·2
25	20 55 5·17	17·72	0·17	19 30 20·5	76·8	2·4	6·3
26	21 2 9·65	17·65	0·17	18 58 50·8	80·7	2·4	6·3
27	21 9 12·48	17·58	0·17	18 25 49·4	84·5	2·4	6·4
28	21 16 13·33	17·49	0·17	17 51 17·8	88·2	2·4	6·4
29	21 23 11·81	17·38	0·17	17 15 18·3	91·8	2·5	6·5
30	21 30 7·47	17·25	0·17	16 37 53·0	95·3	2·5	6·5
31	21 36 59·80	17·10	0·18	15 59 5·7	98·6	2·5	6·6
	18	+16·02	0·18	S. 15 19 0·1	+101·8	2·5	6·7

FEBRUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	h m s 21 43 31.70	S. 15 20 39.1	0.1059968	0 58.5	353 49 11.2	S. 5 34 34.9	9.5558750
2	21 50 14.86	14 39 28.2	.1002436	1 1.3	358 32 27.3	5 12 32.4	.5489332
3	21 56 52.67	13 57 9.6	.0940385	1 4.0	3 24 33.0	4 47 34.6	.5420221
4	22 3 24.21	13 13 50.7	.0873575	1 6.6	8 25 39.0	4 19 39.0	.5351962
5	22 9 48.46	12 29 39.7	.0801765	1 9.0	13 35 51.7	3 48 45.9	.5285242
6	22 16 4.24	11 44 46.3	.0724728	1 11.3	18 55 11.8	3 14 59.8	.5220753
7	22 22 10.21	10 59 21.9	.0642256	1 13.5	24 23 32.9	2 38 29.3	.5159420
8	22 28 4.87	10 13 39.8	.0554175	1 15.5	30 0 40.7	1 59 28.1	.5101965
9	22 33 46.57	9 27 54.4	.0460357	1 17.2	35 46 11.8	1 18 15.3	.5049311
10	22 39 13.50	8 42 22.8	.0360726	1 18.7	41 39 32.9	S. 0 35 16.3	.5002331
11	22 44 23.67	7 57 23.2	.0255289	1 19.9	47 40 0.0	N. 0 8 58.0	.4961364
12	22 49 15.00	7 13 16.0	.0144144	1 20.8	53 46 38.5	0 53 51.6	.4928707
13	22 53 45.27	6 30 23.0	0.0027481	1 21.3	59 58 24.6	1 38 43.9	.4903519
14	22 57 52.24	5 49 7.4	9.9905627	1 21.5	66 14 3.9	2 22 52.2	.4886850
15	23 1 33.63	5 9 53.0	.9779042	1 21.2	72 32 14.5	3 5 32.2	.4879061
16	23 4 47.23	4 33 4.7	.9648327	1 20.5	78 51 28.7	3 46 1.2	.4880331
17	23 7 30.94	3 59 7.1	.9514244	1 19.2	85 10 16.0	4 23 39.7	.4890625
18	23 9 42.90	3 28 24.4	.9377702	1 17.5	91 27 6.2	4 57 53.6	.4909723
19	23 11 21.52	3 1 19.8	.9239765	1 15.1	97 40 31.5	5 28 15.3	.4937201
20	23 12 25.60	2 38 14.4	.9101645	1 12.2	103 49 9.5	5 54 24.6	.4972477
21	23 12 54.40	2 19 27.4	.8964683	1 8.8	109 51 46.4	6 16 9.8	.5014845
22	23 12 47.77	2 5 14.4	.8830335	1 4.7	115 47 18.1	6 33 26.5	.5063501
23	23 12 6.12	1 55 47.4	.8700128	1 0.0	121 34 51.2	6 46 17.3	.5117582
24	23 10 50.69	1 51 13.0	.8575638	0 54.8	127 13 44.7	6 54 31.0	.5176224
25	23 9 3.39	1 51 32.9	.8458450	0 49.1	132 43 27.7	6 59 20.9	.5238534
26	23 6 46.90	1 56 42.5	.8350072	0 42.9	138 3 41.9	7 0 3.8	.5303696
27	23 4 4.64	2 6 30.8	.8251921	0 36.3	143 14 17.4	6 57 18.7	.5370918
28	23 1 0.70	2 20 40.1	.8165245	0 29.3	148 15 13.2	6 51 25.6	.5439486
29	22 57 39.72	S. 2 38 46.5	9.8091063	0 22.0	153 6 35.7	N. 6 42 45.2	9.5508742

FEBRUARY, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi- diameter.</i>	<i>Hor. Par.</i>
<small>h m s</small>	<small>s</small>	<small>s</small>	<small>o ' "</small>	<small>"</small>	<small>"</small>	<small>"</small>
21 43 48·18	+16·92	0·18	S. 15 19 0·1	+101·8	2·5	6·7
21 50 31·91	16·72	0·18	14 37 41·4	104·7	2·6	6·8
21 57 10·21	16·47	0·18	13 55 15·3	107·4	2·6	6·9
22 3 42·14	16·18	0·18	13 11 49·2	109·7	2·6	7·0
22 10 6·67	15·85	0·19	12 27 31·5	111·7	2·7	7·1
22 16 22·61	15·47	0·19	11 42 31·9	113·2	2·8	7·3
22 22 28·60	15·02	0·19	10 57 2·2	114·2	2·8	7·4
22 28 23·12	14·51	0·19	10 11 15·8	114·6	2·9	7·6
22 34 4·49	13·93	0·19	9 25 27·4	-114·3	2·9	7·7
22 39 30·91	13·26	0·20	8 39 54·2	113·3	3·0	7·9
22 44 40·36	12·51	0·21	7 54 54·6	111·5	3·1	8·1
22 49 30·74	11·67	0·21	7 10 49·3	108·8	3·1	8·3
22 53 59·87	10·74	0·22	6 28 0·3	105·1	3·2	8·6
22 58 5·48	9·71	0·22	5 46 50·7	100·5	3·3	8·8
23 1 45·31	8·59	0·23	5 7 44·3	94·9	3·4	9·0
23 4 57·19	7·38	0·23	4 31 6·0	88·2	3·5	9·3
23 7 39·05	6·09	0·24	3 57 20·3	80·5	3·6	9·6
23 9 49·07	4·73	0·25	3 26 51·3	71·8	3·7	9·9
23 11 25·72	3·31	0·26	3 0 1·5	62·2	3·9	10·2
23 12 27·88	1·86	0·27	2 37 11·6	51·8	4·0	10·6
23 12 54·87	+ 0·39	0·27	2 18 40·4	40·7	4·1	10·9
23 12 46·63	- 1·07	0·28	2 4 42·7	29·0	4·3	11·3
23 12 3·64	2·50	0·29	1 55 30·1	16·9	4·4	11·6
23 10 47·16	3·86	0·30	1 51 8·5	+ 4·7	4·5	11·9
23 8 59·19	5·12	0·31	1 51 38·7	- 7·3	4·6	12·2
23 6 42·41	6·25	0·32	1 56 56·0	19·1	4·8	12·6
23 4 0·24	7·23	0·33	2 6 49·2	30·2	4·9	12·9
23 0 56·76	8·03	0·33	2 21 0·1	40·5	4·9	13·1
22 57 36·53	- 8·62	0·34	S. 2 39 4·9	- 49·7	5·0	13·3

MARCH, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	^h 22 ^m 57 ^s 39.72	S. 2 38 46.5	9.8091065	^h 0 ^m 22.0	^o 153 ['] 6 ["] 35.7	N. 6 42 45.2	9.55087
2	22 54 6.73	3 0 20.4	.8030133	0 14.6	157 48 37.0	6 31 37.3	.55781
3	22 50 26.99	3 24 47.8	.7982911	{ ^s 22.1}	162 21 33.8	6 18 20.9	.56471
4	22 46 45.72	3 51 31.5	.7949524	23 51.9	166 45 47.2	6 3 14.1	.57153
5	22 43 8.02	4 19 52.8	.7929811	23 44.5	171 1 39.3	5 46 33.3	.57822
6	22 39 38.55	4 49 13.2	.7923310	23 37.3	175 9 34.9	5 28 33.4	.58471
7	22 36 21.51	5 18 55.8	.7929327	23 30.4	179 9 59.1	5 9 27.7	.59111
8	22 33 20.47	5 48 26.8	.7946961	23 23.7	183 3 18.2	4 49 28.2	.59721
9	22 30 38.34	6 17 15.7	.7975182	23 17.5	186 49 57.8	4 28 45.5	.60321
10	22 28 17.36	6 44 56.7	.8012871	23 11.6	190 30 23.7	4 7 28.7	.60901
11	22 26 19.13	7 11 8.3	.8058876	23 6.1	194 5 0.3	3 45 46.1	.61431
12	22 24 44.63	7 35 33.3	.8112061	23 1.0	197 34 12.4	3 23 44.6	.61971
13	22 23 34.38	7 57 58.8	.8171340	22 56.2	200 58 22.7	3 1 30.1	.62471
14	22 22 48.39	8 18 14.9	.8235687	22 51.9	204 17 53.9	2 39 8.2	.62911
15	22 22 26.38	8 36 15.5	.8304161	22 48.0	207 33 7.6	2 16 43.3	.63391
16	22 22 27.76	8 51 56.8	.8375925	22 44.4	210 44 24.3	1 54 19.1	.63811
17	22 22 51.71	9 5 16.9	.8450224	22 41.3	213 52 3.5	1 31 59.2	.64201
18	22 23 37.35	9 16 15.2	.8526401	22 38.4	216 56 24.0	1 9 46.5	.64561
19	22 24 43.62	9 24 53.4	.8603896	22 35.9	219 57 43.6	0 47 43.5	.64901
20	22 26 9.40	9 31 13.1	.8682224	22 33.7	222 56 19.4	0 25 52.3	.65211
21	22 27 53.64	9 35 16.9	.8760971	22 31.7	225 52 27.9	N. 0 4 15.0	.65501
22	22 29 55.19	9 37 8.0	.8839802	22 30.1	228 46 24.8	S. 0 17 6.9	.65761
23	22 32 13.02	9 36 49.6	.8918429	22 28.7	231 38 25.4	0 38 11.9	.65991
24	22 34 46.05	9 34 25.4	.8996615	22 27.5	234 28 43.7	0 58 58.4	.66201
25	22 37 33.31	9 29 58.7	.9074171	22 26.5	237 17 34.2	1 19 25.5	.66371
26	22 40 33.87	9 23 33.1	.9150941	22 25.8	240 5 10.3	1 39 31.9	.66511
27	22 43 46.85	9 15 12.2	.9226811	22 25.3	242 51 45.3	1 59 16.5	.66651
28	22 47 11.43	9 4 59.5	.9301676	22 24.9	245 37 32.3		
29	22 50 46.86	8 52 58.0	.9375474	22 24.7	248 22 44.4		
30	22 54 32.43	8 39 11.0	.9448136	22 24.7	251 7 33.0		
31	22 58 27.49	8 23 41.8	.9519636	22 24.8	253 -		
32	23 2 31.50	S. 8 6 32.9	9.9589942	22 25.0	256		

MARCH, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 22 ^m 57 ^s 36·53	8·62	0·34	^o S. 2 ⁱ 39 ["] 4·9	49·7	5·0	13·3
2	22 54 4·53	9·01	0·34	3 0 34·5	57·5	5·1	13·5
3	{ 22 52 23·21 }	{ 8·15 }	{ 0·35 }	{ 3 51 22·3 }	{ 65·3 }	{ 5·1 }	{ 13·7 }
4	22 43 9·23	8·89	0·35	4 19 43·0	72·0	5·2	13·8
5	22 39 40·75	8·46	0·35	4 48 53·9	73·7	5·2	13·8
6	22 36 24·51	7·87	0·35	5 18 27·6	73·9	5·2	13·8
7	22 33 24·03	7·15	0·35	5 47 50·7	72·8	5·2	13·8
8	22 30 42·17	6·32	0·35	6 16 32·8	70·5	5·2	13·7
9	22 28 21·20	5·41	0·34	6 44 8·7	67·3	5·1	13·6
10	22 26 22·73	4·45	0·34	7 10 17·1	63·3	5·1	13·4
11	22 24 47·74	3·46	0·34	7 34 40·4	58·6	5·0	13·3
12	22 23 36·77	2·45	0·33	7 57 6·1	53·5	4·9	13·1
13	22 22 49·92	1·45	0·33	8 17 23·9	48·0	4·9	12·9
14	22 22 26·92	-0·47	0·32	8 35 27·4	42·3	4·8	12·7
15	22 22 27·17	+0·49	0·31	8 51 13·1	36·5	4·7	12·5
16	22 22 49·92	1·41	0·31	9 4 38·4	30·6	4·6	12·3
17	22 23 34·32	2·29	0·31	9 15 42·8	24·8	4·6	12·1
18	22 24 39·35	3·12	0·31	9 24 27·9	19·0	4·5	12·0
19	22 26 3·88	3·91	0·31	9 30 54·7	13·3	4·5	11·8
20	22 27 46·89	4·66	0·30	9 35 6·1	7·7	4·3	11·5
21	22 29 47·26	5·36	0·29	9 37 5·0	-2·2	4·2	11·2
22	22 32 3·95	6·02	0·29	9 36 54·6	+3·1	4·2	11·0
23	22 34 35·90	6·64	0·28	9 34 38·3	8·3	4·1	10·8
24	22 37 22·14	7·21	0·28	9 30 19·6	13·3	4·0	10·6
25	22 40 21·76	7·75	0·27	9 24 1·7	18·2	3·9	10·4
26	22 43 33·86	8·25	0·27	9 15 48·4	22·9	3·9	10·3
27	22 46 57·62	8·72	0·27	9 5 43·1	27·5	3·8	10·1
28		9·16	0·26	8 53 48·9	32·0	3·7	9·9
29		9·57	0·26	8 40 8·9	36·3	3·7	9·8
30		9·96	0·25	8 24 46·4	40·5	3·6	9·6
31			0·24	8 7 43·9	44·6	3·6	9·5
32			0·23	S. 7 49 4·3	+48·6	3·5	9·3

APRIL, 1842,

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	23 2 31.50	S. 8 6 32.9	9.9589942	22 25.0	256 36 51.4	S. 3 31 56.2	9.66897
2	23 6 43.89	7 47 47.2	.9659037	22 25.4	259 21 45.2	3 49 7.8	.66867
3	23 11 4.20	7 27 27.7	.9726915	22 25.9	262 7 5.2	4 5 49.8	.66811
4	23 15 31.99	7 5 36.6	.9798575	22 26.6	264 53 3.8	4 22 0.8	.66799
5	23 20 6.87	6 42 16.7	.9859019	22 27.3	267 39 53.2	4 37 39.4	.66621
6	23 24 48.55	6 17 29.7	.9923244	22 28.2	270 27 45.8	4 52 43.7	.66467
7	23 29 36.68	5 51 18.4	9.9986265	22 29.1	273 16 54.4	5 7 12.1	.66305
8	23 34 31.01	5 23 44.8	0.0048092	22 30.2	276 7 32.3	5 21 2.5	.66139
9	23 39 31.35	4 54 51.1	.0108731	22 31.3	278 59 52.5	5 34 12.7	.65925
10	23 44 37.49	4 24 39.1	.0168191	22 32.6	281 54 9.0	5 46 40.3	.65685
11	23 49 49.32	3 53 11.0	.0226483	22 33.9	284 50 35.8	5 58 22.6	.65419
12	23 55 6.71	3 20 28.1	.0283604	22 35.4	287 49 27.4	6 9 16.7	.65127
13	0 0 29.57	2 46 32.8	.0339564	22 36.9	290 50 58.9	6 19 19.3	.64805
14	0 5 57.87	2 11 26.9	.0394357	22 38.5	293 55 25.7	6 28 26.7	.64484
15	0 11 31.59	1 35 12.0	.0447977	22 40.2	297 3 4.4	6 36 35.1	.64085
16	0 17 10.75	0 57 49.9	.0500408	22 42.0	300 14 11.5	6 43 40.1	.63685
17	0 22 55.39	S. 0 19 22.5	.0551644	22 43.9	303 29 4.9	6 49 36.9	.63256
18	0 28 45.56	N. 0 20 8.3	.0601656	22 45.9	306 48 2.7	6 54 20.3	.62805
19	0 34 41.37	1 0 40.7	.0650415	22 48.0	310 11 23.6	6 57 44.7	.62314
20	0 40 42.94	1 42 12.6	.0697879	22 50.3	313 39 27.7	6 59 44.0	.61814
21	0 46 50.40	2 24 42.1	.0744000	22 52.4	317 12 34.6	7 0 11.5	.61285
22	0 53 3.92	3 8 6.7	.0788730	22 54.8	320 51 6.0	6 59 0.1	.60726
23	0 59 23.69	3 52 24.3	.0831999	22 57.3	324 35 23.2	6 56 2.3	.60165
24	1 5 49.92	4 37 31.9	.0873731	22 59.9	328 25 48.5	6 51 9.9	.59543
25	1 12 22.82	5 23 27.1	.0913832	23 2.6	332 22 44.0	6 44 14.9	.58919
26	1 19 2.61	6 10 6.4	.0952207	23 5.5	336 26 32.4	6 35 8.3	.58276
27	1 25 49.54	6 57 26.6	.0988732	23 8.4	340 37 36.1	6 23 41.7	.57617
28	1 32 43.86	7 45 23.6	.1023282	23 11.5	344 56 16.9	6 9 46.2	.56943
29	1 39 45.79	8 33 53.1	.1055714	23 14.8	349 22 56.1	5 53 13.8	.56238
30	1 46 55.57	9 22 50.2	.1085867	23 18.1	353 57 53.0	5 33 56.9	.55566
31	1 54 13.42	N.10 12 9.4	0.1113566	23 21.6	358 41 25.1	S. 5 11 49.1	9.5487

APRIL, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 23 ^m 6 ^s 26·99	+10·66	0·23	S. ^o 7 ⁱ 49 ⁿ 4·3	+ 48·6	3·5	9·3
2	23 10 46·87	10·99	0·23	7 28 50·6	52·5	3·5	9·2
3	23 15 14·28	11·29	0·23	7 7 4·9	56·3	3·4	9·0
4	23 19 48·82	11·58	0·23	6 43 50·1	59·9	3·4	8·9
5	23 24 30·22	11·86	0·22	6 19 8·0	63·5	3·3	8·7
6	23 29 18·11	12·13	0·22	5 53 1·1	67·0	3·2	8·6
7	23 34 12·25	12·38	0·22	5 25 31·6	70·4	3·2	8·5
8	23 39 12·44	12·63	0·22	4 56 41·5	73·7	3·2	8·4
9	23 44 18·47	12·87	0·21	4 26 32·9	77·0	3·1	8·3
10	23 49 30·23	13·11	0·21	3 55 7·7	80·1	3·1	8·2
11	23 54 47·58	13·34	0·20	3 22 27·4	83·2	3·0	8·0
12	0 0 10·44	13·57	0·20	2 48 34·3	86·2	3·0	7·9
13	0 5 38·77	13·79	0·19	2 13 30·3	89·1	2·9	7·8
14	0 11 12·36	14·02	0·19	1 37 16·9	92·0	2·9	7·7
15	0 16 51·82	14·25	0·19	0 59 55·8	94·8	2·9	7·7
16	0 22 36·37	14·48	0·19	S. 0 21 29·1	97·5	2·9	7·6
17	0 28 26·99	14·71	0·19	N. 0 18 1·4	100·1	2·8	7·5
18	0 34 22·92	14·95	0·19	0 58 34·0	102·6	2·8	7·4
19	0 40 24·71	15·20	0·19	1 40 6·5	105·1	2·8	7·3
20	0 46 32·44	15·45	0·18	2 22 37·1	107·5	2·7	7·2
21	0 52 46·25	15·71	0·18	3 6 3·3	109·7	2·7	7·2
22	0 59 6·36	15·97	0·18	3 50 22·9	111·9	2·7	7·1
23	1 5 32·96	16·25	0·18	4 35 33·0	113·9	2·6	7·0
24	1 12 6·29	16·53	0·18	5 21 31·2	115·9	2·6	7·0
25	1 18 46·54	16·83	0·18	6 8 14·1	117·7	2·6	6·9
26	1 25 34·00	17·13	0·18	6 55 38·4	119·3	2·6	6·8
27	1 32 28·89	17·45	0·18	7 43 40·0	120·8	2·6	6·8
28	1 39 31·46	17·77	0·17	8 32 14·7	122·1	2·5	6·7
29	1 46 41·93	18·10	0·17	9 21 17·5	123·1	2·5	6·7
30	1 54 0·56	18·45	0·17	10 10 43·0	124·0	2·5	6·7
31	2 1 27·53	+18·80	0·17	N. 11 0 25·3	+124·5	2·5	6·6

MAY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	1 54 13.42	N.10 12 9.4	0.1113566	23 21.6	358 41 25.1	S.5 11 49.1	9.548726
2	2 1 39.53	11 1 44.7	.1138621	23 25.3	3 33 47.2	4 46 45.8	.5418151
3	2 9 14.03	11 51 29.1	.1160835	23 29.0	8 35 9.9	4 18 44.7	.5349930
4	2 16 57.01	12 41 14.8	.1179992	23 33.0	13 45 39.7	3 47 46.3	.5283266
5	2 24 48.50	13 30 53.6	.1195870	23 37.0	19 5 16.6	3 13 55.0	.5218941
6	2 32 48.44	14 20 16.1	.1208239	23 41.2	24 33 54.3	2 37 19.7	.5157633
7	2 40 56.66	15 9 12.1	.1216872	23 45.6	30 11 17.5	1 58 14.1	.5100322
8	2 49 12.93	15 57 30.7	.1221542	23 50.0	35 57 3.7	1 16 57.6	.5047855
9	2 57 36.82	16 45 0.5	.1222035	23 54.6	41 50 38.6	S.0 33 55.8	.5001036
10	3 6 7.81	17 31 29.1	.1218152	23 59.3	47 51 18.2	N.0 10 20.3	.4960784
11	3 14 45.24	18 16 44.2	.1209724	* *	53 58 7.7	0 55 14.5	.4927857
12	3 23 28.27	19 0 33.2	.1196610	0 4.1	60 10 2.3	1 40 6.2	.4902520
13	3 32 15.98	19 42 44.0	.1178706	0 9.0	66 25 47.7	2 24 12.4	.4886513
14	3 41 7.29	20 23 4.2	.1155955	0 13.9	72 44 0.9	3 6 48.9	.4879004
15	3 50 1.02	21 1 23.1	.1128343	0 18.9	79 3 15.9	3 47 13.2	.4880552
16	3 58 55.95	21 37 30.8	.1095906	0 23.9	85 22 1.6	4 24 46.1	.4891150
17	4 7 50.75	22 11 18.3	.1058725	0 28.9	91 38 46.9	4 58 53.3	.4910480
18	4 16 44.12	22 42 38.7	.1016929	0 33.8	97 52 4.7	5 29 7.5	.4938201
19	4 25 34.76	23 11 26.2	.0970677	0 38.7	104 0 33.0	5 53 8.8	.4973783
20	4 34 21.39	23 37 37.2	.0920171	0 43.6	110 2 57.2	6 16 45.7	.5016272
21	4 43 2.80	24 1 9.2	.0865624	0 48.3	115 58 15.0	6 33 54.1	.5065103
22	4 51 37.84	24 22 1.9	.0807278	0 53.0	121 45 33.0	6 46 36.9	.5119336
23	5 0 5.47	24 40 15.8	.0745366	0 57.5	127 24 10.0	6 55 2.9	.5178093
24	5 8 24.73	24 55 52.9	.0680162	1 1.9	132 53 36.2	6 59 25.5	.5240503
25	5 16 34.75	25 8 56.6	.0611905	1 6.1	138 13 32.8	7 0 1.7	.5305736
26	5 24 34.73	25 19 30.6	.0540834	1 10.2	143 23 50.3	6 57 10.6	.5373003
27	5 32 24.03	25 27 40.2	.0467186	1 14.1	148 24 28.6	6 51 12.1	.5441599
28	5 40 1.98	25 33 30.6	.0391176	1 17.8	153 15 33.7	6 42 26.8	.5516000
29	5 47 28.07	25 37 7.4	.0313019	1 21.3	157 57 18.1	6 31 14.6	.5580000
30	5 54 41.80	25 38 37.2	.0232915	1 24.5	162 29 59.1	6 17 54.6	.5640000
31	6 1 42.75	25 38 6.2	.0151042	1 27.6	166 53 56.6	6 2 44.7	.5700000
32	6 8 30.54	N.25 35 41.0	0.0067565	1 30.5	171 9 33.9	N.5 46	

MAY, 1842:

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 2 ^m 1 ^s 27·53	+18·80	0·17	N.11 0 25·2	+124·5	2·5	6·6
2	2 9 2·95	19·15	0·17	11 50 17·0	124·8	2·5	6·6
3	2 16 46·94	19·51	0·17	12 40 10·6	124·7	2·5	6·5
4	2 24 39·57	19·87	0·17	13 29 57·7	124·2	2·5	6·5
5	2 32 40·72	20·22	0·17	14 19 29·0	123·3	2·5	6·5
6	2 40 50·24	20·57	0·17	15 8 34·0	122·0	2·5	6·5
7	2 49 7·91	20·90	0·17	15 57 1·8	120·2	2·5	6·5
8	2 57 33·31	21·21	0·17	16 44 41·0	117·9	2·5	6·5
9	3 6 5·88	21·50	0·17	17 31 18·8	115·1	2·5	6·5
10	3 14 44·99	21·75	0·17	18 16 42·9	111·8	2·5	6·5
11	* * *	*	*	* * *	*	*	*
12	3 23 29·77	21·97	0·17	19 0 40·5	107·9	2·5	6·5
13	3 32 19·29	22·15	0·17	19 42 59·4	103·5	2·5	6·5
14	3 41 12·44	22·27	0·17	20 23 26·9	98·7	2·5	6·6
15	3 50 8·03	22·35	0·17	21 1 52·3	93·4	2·5	6·6
16	3 59 4·81	22·37	0·17	21 38 5·6	87·7	2·5	6·7
17	4 8 1·45	22·34	0·17	22 11 57·5	81·6	2·5	6·7
18	4 16 56·61	22·25	0·18	22 43 21·1	75·3	2·6	6·8
19	4 25 48·98	22·11	0·19	23 12 10·6	68·8	2·6	6·9
20	4 34 37·25	21·91	0·19	23 38 22·3	62·2	2·6	6·9
21	4 43 20·20	21·66	0·19	24 1 53·9	55·5	2·6	7·0
22	4 51 56·65	21·37	0·20	24 22 45·0	48·8	2·7	7·1
23	5 0 25·57	21·03	0·20	24 40 56·1	42·0	2·7	7·2
24	5 8 45·99	20·66	0·21	24 56 29·7	35·7	2·8	7·4
25	5 16 57·02	20·25	0·21	25 9 28·9	29·4	2·8	7·4
26	5 24 57·86	19·81	0·21	25 19 57·8	23·1	2·9	7·6
27	5 32 47·88	19·35	0·21	25 28 1·6	17·2	2·9	7·7
28	5 40 26·43	18·86	0·21	25 33 45·6	11·5	2·9	7·8
29	5 47 52·87	18·35	0·22	25 37 15·8	6·1	3·0	8·0
30		17·82	0·22	25 38 38·6	+ 0·9	3·1	8·1
31		17·27	0·22	25 38 0·5	- 4·0	3·1	8·3
32			0·23	N.25 35 28·1	- 8·6	3·2	8·5

JUNE, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vel.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	6 8 30.54	N.25 35 41.0	0.0067565	1 30.5	171 9 33.9	N.5 46 1.2	9.57843
2	6 15 4.81	25 31 28.2	9.9982653	1 33.1	175 17 15.2	5 27 59.0	.58497
3	6 21 25.26	25 25 34.7	*9896452	1 35.5	179 17 26.2	5 8 51.5	*59134
4	6 27 31.54	25 18 7.0	*9809095	1 37.6	183 10 32.9	4 48 50.5	*59750
5	6 33 23.39	25 9 11.7	*9720726	1 39.5	186 57 0.7	4 28 6.6	*60340
6	6 39 0.50	24 58 55.5	*9631465	1 41.2	190 37 15.5	4 6 49.0	*60918
7	6 44 22.67	24 47 24.7	*9541441	1 42.6	194 11 42.0	3 45 5.6	*61466
8	6 49 29.54	24 34 46.0	*9450777	1 43.7	197 40 44.4	3 23 3.5	*61989
9	6 54 20.86	24 21 5.7	*9359592	1 44.6	201 4 46.1	3 0 48.8	*62489
10	6 58 56.33	24 6 30.1	*9268018	1 45.3	204 24 9.4	2 38 26.8	*62959
11	7 3 15.64	23 51 5.3	*9176191	1 45.6	207 39 15.6	2 16 1.7	*63401
12	7 7 18.54	23 34 57.8	*9084255	1 45.7	210 50 25.3	1 53 37.7	*63826
13	7 11 4.65	23 18 13.4	*8992350	1 45.5	213 57 58.2	1 31 17.9	*64218
14	7 14 33.68	23 0 58.4	*8900642	1 45.0	217 2 12.8	1 9 5.5	*64579
15	7 17 45.29	22 43 18.8	*8809306	1 44.3	220 3 27.6	0 47 2.8	*64917
16	7 20 39.16	22 25 20.8	*8718544	1 43.2	223 1 58.7	0 25 12.0	*65281
17	7 23 14.94	22 7 10.1	*8628560	1 41.8	225 58 3.2	N.0 3 35.1	*65513
18	7 25 32.31	21 48 53.1	*8539598	1 40.2	228 51 56.4	S.0 17 46.2	*65769
19	7 27 30.99	21 30 35.6	*8451912	1 38.2	231 43 53.4	0 38 50.6	*66009
20	7 29 10.69	21 12 23.3	*8365793	1 35.9	234 34 9.1	0 59 36.7	*66203
21	7 30 31.16	20 54 22.5	*8281531	1 33.3	237 22 57.4	1 20 3.2	*66383
22	7 31 32.19	20 36 39.1	*8199536	1 30.3	240 10 31.7	1 40 8.9	*66533
23	7 32 13.74	20 19 19.0	*8120124	1 27.1	242 57 5.3	1 59 52.9	*66667
24	7 32 35.71	20 2 28.0	*8043725	1 23.5	245 42 51.1	2 19 14.0	*66760
25	7 32 38.15	19 46 11.7	*7970767	1 19.6	248 28 2.1	2 38 11.2	*66833
26	7 32 21.29	19 30 36.2	*7901725	1 15.3	251 12 50.5	2 56 43.5	*66880
27	7 31 45.49	19 15 46.5	*7837090	1 10.8	253 57 28.7	3 14 49.5	*66917
28	7 30 51.24	19 1 48.1	*7777362	1 5.9	256 42 9.7	3 32 28.7	*66829
29	7 29 39.29	18 48 46.0	*7723090	1 0.8	259 27 4.3	3 49 39.4	*66861
30	7 28 10.54	18 36 45.3	*7674794	0 55.4	262 12 25.5	4 6 20.5	*66893
31	7 26 26.15	N.18 25 50.1	9.7633007	0 49.7	264 58 25.4	S.4 22 30.3	9.66701

JUNE, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	6 ^h 8 ^m 55 ^s ·70	+16 [·] 71	0 [·] 23	N.25 35 28 [·] 1	— 8 [·] 6	3 [·] 2	8 [·] 5
2	6 15 29 [·] 82	16 [·] 13	0 [·] 24	25 31 8 [·] 3	13 [·] 0	3 [·] 2	8 [·] 6
3	6 21 49 [·] 98	15 [·] 54	0 [·] 24	25 25 7 [·] 8	17 [·] 0	3 [·] 3	8 [·] 8
4	6 27 55 [·] 85	14 [·] 94	0 [·] 25	25 17 33 [·] 3	20 [·] 8	3 [·] 4	9 [·] 0
5	6 33 47 [·] 16	14 [·] 33	0 [·] 26	25 8 31 [·] 6	24 [·] 3	3 [·] 5	9 [·] 2
6	6 39 23 [·] 62	13 [·] 71	0 [·] 26	24 58 9 [·] 3	27 [·] 5	3 [·] 5	9 [·] 4
7	6 44 45 [·] 04	13 [·] 07	0 [·] 26	24 46 32 [·] 9	30 [·] 5	3 [·] 6	9 [·] 5
8	6 49 51 [·] 06	12 [·] 43	0 [·] 27	24 33 48 [·] 9	33 [·] 1	3 [·] 7	9 [·] 8
9	6 54 41 [·] 42	11 [·] 77	0 [·] 28	24 20 3 [·] 8	35 [·] 6	3 [·] 8	10 [·] 0
10	6 59 15 [·] 83	11 [·] 10	0 [·] 29	24 5 24 [·] 0	37 [·] 7	3 [·] 9	10 [·] 2
11	7 3 34 [·] 02	10 [·] 42	0 [·] 29	23 49 55 [·] 6	39 [·] 6	3 [·] 9	10 [·] 4
12	7 7 35 [·] 72	9 [·] 72	0 [·] 30	23 33 45 [·] 2	41 [·] 2	4 [·] 0	10 [·] 6
13	7 11 20 [·] 56	9 [·] 01	0 [·] 30	23 16 58 [·] 6	42 [·] 6	4 [·] 1	10 [·] 8
14	7 14 48 [·] 26	8 [·] 29	0 [·] 31	22 59 41 [·] 9	43 [·] 7	4 [·] 2	11 [·] 1
15	7 17 58 [·] 48	7 [·] 56	0 [·] 32	22 42 1 [·] 2	44 [·] 6	4 [·] 3	11 [·] 3
16	7 20 50 [·] 93	6 [·] 81	0 [·] 33	22 24 2 [·] 9	45 [·] 2	4 [·] 4	11 [·] 6
17	7 23 25 [·] 25	6 [·] 05	0 [·] 33	22 5 52 [·] 6	45 [·] 6	4 [·] 5	11 [·] 8
18	7 25 41 [·] 16	5 [·] 28	0 [·] 33	21 47 36 [·] 7	45 [·] 7	4 [·] 5	12 [·] 0
19	7 27 38 [·] 39	4 [·] 49	0 [·] 33	21 29 20 [·] 8	45 [·] 6	4 [·] 6	12 [·] 3
20	7 29 16 [·] 65	3 [·] 70	0 [·] 34	21 11 10 [·] 9	45 [·] 2	4 [·] 7	12 [·] 5
21	7 30 35 [·] 70	2 [·] 89	0 [·] 34	20 53 13 [·] 0	44 [·] 6	4 [·] 8	12 [·] 8
22	7 31 35 [·] 38	2 [·] 08	0 [·] 34	20 35 33 [·] 1	43 [·] 7	4 [·] 9	13 [·] 0
23	7 32 15 [·] 62	1 [·] 27	0 [·] 35	20 18 17 [·] 0	42 [·] 6	5 [·] 0	13 [·] 2
24	7 32 36 [·] 38	+ 0 [·] 46	0 [·] 36	20 1 30 [·] 4	41 [·] 3	5 [·] 1	13 [·] 5
25	7 32 37 [·] 72	— 0 [·] 35	0 [·] 37	19 45 18 [·] 9	39 [·] 7	5 [·] 2	13 [·] 7
26	7 32 19 [·] 88	1 [·] 14	0 [·] 37	19 29 48 [·] 5	37 [·] 8	5 [·] 2	13 [·] 9
27	7 31 48 [·] 25	1 [·] 91	0 [·] 37	19 15 4 [·] 0	35 [·] 8	5 [·] 3	14 [·] 1
28	7 30 48 [·] 33	2 [·] 66	0 [·] 37	19 1 11 [·] 1	33 [·] 6	5 [·] 4	14 [·] 3
29	7 29 35 [·] 87	3 [·] 37	0 [·] 38	18 48 14 [·] 3	31 [·] 1	5 [·] 5	14 [·] 5
30	7 28 6 [·] 30	4 [·] 04	0 [·] 38	18 36 18 [·] 9	28 [·] 5	5 [·] 5	14 [·] 7
31	7 26 22 [·] 27	— 4 [·] 66	0 [·] 39	N.18 25 28 [·] 7	— 25 [·] 7	5 [·] 6	14 [·] 8

JULY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	h m s 7 26 26.15	N. 18 25 50.1	9.7633007	h m 0 49.7	o l n 264 58 25.4	S. 4 22 30.5	9.667264
2	7 24 27.49	18 16 4.6	.7598237	0 43.8	267 45 16.8	4 38 8.0	.6661742
3	7 22 16.21	18 7 32.7	.7570993	0 37.7	270 33 11.7	4 53 11.3	.6648229
4	7 19 54.17	18 0 17.2	.7551703	0 31.4	273 22 23.6	5 7 38.5	.663208
5	7 17 23.46	17 54 20.5	.7540771	0 25.0	276 13 4.6	5 21 27.7	.6613356
6	7 14 46.41	17 49 44.8	.7538518	0 18.4	279 5 28.5	5 34 36.6	.6591884
7	7 12 5.44	17 46 31.3	.7545184	0 11.9	281 59 49.0	5 47 2.9	.6567682
8	7 9 23.15	17 44 40.2	.7560936	{ _m 5.7}	284 56 20.2	5 58 43.8	.6541057
9	7 6 42.23	17 44 11.6	.7585831	23 52.1	287 55 16.6	6 9 36.3	.6511635
10	7 4 5.33	17 45 4.5	.7619834	23 45.7	290 56 53.5	6 19 37.2	.6479533
11	7 1 35.15	17 47 17.0	.7662811	23 39.5	294 1 26.5	6 28 42.9	.6444781
12	6 59 14.28	17 50 46.8	.7714534	23 33.5	297 9 11.6	6 36 49.4	.6407273
13	6 57 5.19	17 55 30.7	.7774677	23 27.5	300 20 25.7	6 43 52.3	.6367111
14	6 55 10.20	18 1 24.6	.7842852	23 21.9	303 35 26.5	6 49 46.9	.6324273
15	6 53 31.44	18 8 24.0	.7918588	23 16.7	306 54 32.2	6 54 28.0	.6278777
16	6 52 10.81	18 16 23.5	.8001374	23 11.7	310 18 1.8	6 57 49.8	.6230658
17	6 51 9.95	18 25 17.4	.8090647	23 7.1	313 46 15.1	6 59 46.3	.6179932
18	6 50 30.38	18 34 59.0	.8185813	23 2.9	317 19 32.1	7 0 10.8	.6126673
19	6 50 13.28	18 45 21.5	.8286277	22 59.1	320 58 14.1	6 58 56.2	.6070949
20	6 50 19.69	18 56 17.0	.8391418	22 55.6	324 42 42.5	6 55 54.9	.6012856
21	6 50 50.41	19 7 37.8	.8500626	22 52.6	328 33 19.5	6 50 58.9	.5952513
22	6 51 46.05	19 19 15.2	.8613294	22 50.0	332 30 27.5	6 43 59.9	.589074
23	6 53 7.05	19 31 0.4	.8728829	22 47.8	336 34 29.2	6 34 49.1	.5825225
24	6 54 53.72	19 42 43.8	.8846650	22 46.1	340 45 46.8	6 23 17.9	.5759699
25	6 57 6.24	19 54 15.8	.8966203	22 44.7	345 4 42.2	6 9 17.7	.5692266
26	6 59 44.58	20 5 26.6	.9086941	22 43.8	349 31 36.4	5 52 40.3	.5623767
27	7 2 48.70	20 16 5.0	.9208338	22 43.4	354 6 49.1	5 33 18.1	.5554583
28	7 6 18.38	20 26 0.5	.9329888	22 43.3	358 50 37.7	5 11 4.9	.5485191
29	7 10 13.33	20 35 2.1	.9451082	22 43.7	3 43 16.2	4 45 56.1	.5416096
30	7 14 33.11	20 42 58.2	.9571443	22 44.5	8 44 55.8	4 17 49.5	.5347201
31	7 19 17.19	20 49 37.4	.9690497	22 45.6	13 55 42.4	3 46 45.6	.5278706
32	7 24 24.89	N. 20 54 48.0	9.9807778	22 47.2	19 15 36.2	S. 3	.5210211

JULY, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi-diameter.</i>	<i>Hor. Par.</i>
^h 7 ^m 26 ^s 22·27	- 4·66	0·39	N.18 25 28·7	-25·7	5·6	14·8
7 24 23·67	5·21	0·39	18 15 47·9	22·7	5·6	14·9
7 22 12·61	5·70	0·40	18 7 20·3	19·6	5·7	15·0
7 19 50·96	6·10	0·40	18 0 8·6	16·4	5·7	15·1
7 17 20·77	6·40	0·40	17 54 15·0	13·1	5·7	15·1
7 14 44·36	6·61	0·40	17 49 41·8	9·7	5·7	15·1
7 12 4·10	6·72	0·40	17 46 30·1	- 6·3	5·7	15·1
{ 7 2 22·24 }	{ 6·72 }	{ 0·40 }	{ 17 44 40·3 }	{ -1·3 }	{ 5·7 }	{ 15·1 }
7 4 6·19	6·39	0·40	17 45 4·0	+ 3·8	5·6	14·9
7 1 36·62	6·06	0·39	17 47 15·3	7·1	5·5	14·7
6 59 16·22	5·62	0·39	17 50 43·3	10·2	5·5	14·5
6 57 7·45	5·09	0·38	17 55 24·8	13·2	5·4	14·3
6 55 12·63	4·46	0·37	18 1 15·9	16·0	5·3	14·1
6 53 33·83	3·76	0·37	18 8 12·1	18·6	5·2	13·9
6 52 12·95	2·97	0·36	18 16 8·3	21·0	5·1	13·6
6 51 11·65	2·12	0·35	18 24 58·7	23·1	5·0	13·3
6 50 31·44	1·22	0·35	18 34 36·8	25·0	4·9	13·0
6 50 13·51	- 0·27	0·34	18 44 56·1	26·6	4·8	12·8
6 50 18·93	+ 0·73	0·33	18 55 48·7	27·8	4·7	12·5
6 50 48·51	1·75	0·33	19 7 7·0	28·7	4·6	12·1
6 51 42·89	2·79	0·32	19 18 42·3	29·2	4·5	11·8
6 53 2·52	3·85	0·31	19 30 26·0	29·4	4·3	11·5
6 54 47·74	4·92	0·30	19 42 8·7	29·1	4·2	11·2
6 56 58·79	6·00	0·29	19 53 40·7	28·5	4·1	10·9
6 59 35·64	7·07	0·28	20 4 52·1	27·4	4·0	10·6
7 2 38·31	8·15	0·27	20 15 32·1	25·9	3·9	10·3
7 6 6·57	9·21	0·27	20 25 29·9	23·9	3·8	10·0
7 10 0·18	10·26	0·26	20 34 34·8	21·4	3·7	9·8
7 14 18·71	11·29	0·26	20 42 34·8	18·5	3·6	9·5
7 19 1·68	12·29	0·25	20 49 18·5	15·1	3·5	9·2
7 23 22·24	13·27	0·24	20 54 34·2	11·2	3·4	9·0
7 27 22·24	14·24	0·23	N.20 58 10·6	+ 6·8	3·3	8·7

AUGUST, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ' "		h m	° ' "	° ' "	
1	7 24 24.89	N. 20 54 48.0	9.9807778	22 47.2	19 15 36.2	S. 3 12 49.1	9.5217
2	7 29 55.40	20 58 18.8	9.9922835	22 49.1	24 44 30.2	2 36 8.8	.5158
3	7 35 47.78	20 59 58.7	0.0035227	22 51.3	30 22 9.7	1 56 58.8	.5090
4	7 42 0.90	20 59 36.9	.0144525	22 53.9	36 8 10.5	1 15 38.7	.5010
5	7 48 33.50	20 57 3.5	.0250329	22 56.8	42 1 59.5	S. 0 32 34.0	.4930
6	7 55 24.12	20 52 9.8	.0352244	23 0.0	48 2 50.7	N. 0 11 43.8	.4930
7	8 2 31.17	20 44 48.1	.0449923	23 3.4	54 9 50.6	0 56 38.5	.4920
8	8 9 52.93	20 34 52.0	.0543047	23 7.0	60 21 53.2	1 41 29.4	.4902
9	8 17 27.49	20 22 17.6	.0631343	23 10.9	66 37 44.2	2 25 33.3	.4886
10	8 25 12.96	20 7 2.3	.0714587	23 14.8	72 56 1.1	3 8 6.5	.4870
11	8 33 7.31	19 49 5.5	.0792611	23 18.9	79 15 16.6	3 48 26.1	.4857
12	8 41 8.54	19 28 28.8	.0865304	23 23.1	85 33 59.2	4 25 53.0	.4841
13	8 49 14.69	19 5 15.7	.0932608	23 27.3	91 50 39.2	4 59 53.3	.4911
14	8 57 23.89	18 39 31.3	.0994550	23 31.6	98 3 49.1	5 29 59.9	.4950
15	9 5 34.36	18 11 22.4	.1051169	23 35.8	104 12 7.1	5 55 53.2	.4970
16	9 13 44.50	17 40 57.0	.1102577	23 40.0	110 14 19.6	6 17 21.8	.5017
17	9 21 52.87	17 8 23.9	.1148923	23 44.2	116 9 23.3	6 34 21.9	.5060
18	9 29 58.22	16 33 52.8	.1190388	23 48.3	121 56 25.5	6 46 56.5	.5120
19	9 37 59.47	15 57 33.7	.1227174	23 52.3	127 34 45.6	6 55 14.7	.5170
20	9 45 55.76	15 19 36.6	.1259510	23 56.2	133 3 54.3	6 59 30.0	.5200
21	9 53 46.38	14 40 11.6	.1287624	* *	138 23 33.2	6 59 59.5	.5307
22	10 1 30.78	13 59 28.4	.1311751	0 0.0	143 33 32.9	6 57 2.2	.5370
23	10 9 8.58	13 17 36.2	.1332126	0 3.7	148 33 53.1	6 50 58.2	.5447
24	10 16 39.49	12 34 44.1	.1348972	0 7.3	153 24 40.6	6 42 8.0	.5512
25	10 24 3.36	11 51 0.2	.1362508	0 10.7	158 6 7.9	6 30 31.6	.5582
26	10 31 20.13	11 6 32.3	.1372944	0 14.1	162 38 32.2	6 17 27.9	.5651
27	10 38 29.80	10 21 27.6	.1380468	0 17.3	167 2 13.6	6 2 14.8	.5719
28	10 45 32.44	9 35 52.7	.1385261	0 20.4	171 17 35.7	5 45 28.7	.5786
29	10 52 28.18	8 49 53.6	.1387489	0 23.4	175 25 2.6	5 27 24.3	.5857
30	10 59 17.17	8 3 35.9	.1387296	0 26.3	179 25 0.0	5 8 14.9	.5913
31	11 5 59.61	7 17 4.8	.1384827	0 29.0	183 17 53.7	4 48 12.4	.5976
32	11 12 35.70	N. 6 30 24.5	0.1380204	0 31.7	187 4 9.4	N. 4 27 27.4	.6040

AUGUST, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
h m s	+	°	N. ° ' "	+ "	"	"
7 29 38.14	+ 14.20	0.23	N. 20 58 10.6	+ 6.8	3.3	8.7
7 35 29.92	15.10	0.23	20 59 56.5	+ 1.9	3.2	8.5
7 41 42.66	15.95	0.22	20 59 40.8	- 3.3	3.1	8.3
7 48 15.08	16.74	0.22	20 57 13.5	9.0	3.1	8.1
7 55 5.75	17.47	0.22	20 52 25.7	15.1	3.0	7.9
8 2 13.07	18.13	0.21	20 45 9.5	21.4	2.9	7.7
8 9 35.31	18.71	0.21	20 35 18.4	27.9	2.9	7.6
8 17 10.56	19.21	0.20	20 22 48.1	34.6	2.8	7.4
8 24 56.91	19.63	0.20	20 7 36.1	41.4	2.8	7.3
8 32 52.31	19.97	0.19	19 49 41.6	48.1	2.7	7.2
8 40 54.73	20.22	0.19	19 29 6.2	54.8	2.6	7.0
8 49 2.18	20.39	0.19	19 5 53.3	61.3	2.6	6.9
8 57 12.77	20.48	0.19	18 40 8.0	67.5	2.6	6.8
9 5 24.67	20.50	0.18	18 11 57.2	73.4	2.5	6.7
9 13 36.27	20.46	0.18	17 41 28.7	78.9	2.5	6.7
9 21 46.10	20.33	0.18	17 8 51.8	84.1	2.5	6.6
9 29 52.90	20.20	0.18	16 34 16.2	88.8	2.5	6.5
9 37 55.58	20.01	0.18	15 57 51.9	93.1	2.5	6.5
9 45 53.22	19.79	0.17	15 19 49.1	97.0	2.4	6.4
9 53 45.14	19.54	0.17	14 40 18.0	100.5	2.4	6.4
* * *	*	*	* * *	*	*	*
10 1 30.78	19.26	0.17	13 59 28.4	103.6	2.4	6.3
10 9 9.73	18.98	0.17	13 17 29.7	106.3	2.4	6.3
10 16 41.74	18.68	0.17	12 34 31.0	108.6	2.4	6.3
10 24 6.63	18.39	0.17	11 50 40.4	110.6	2.4	6.3
10 31 24.36	18.09	0.16	11 6 6.1	112.2	2.3	6.2
10 38 34.92	17.79	0.16	10 20 55.0	113.6	2.3	6.2
10 45 33.38	17.50	0.15	9 35 13.7	114.8	2.3	6.2
10 52 34.88	17.21	0.16	8 49 8.6	115.6	2.3	6.2
10 59 24.66	16.93	0.15	8 2 45.1	116.3	2.3	6.2
11 6	16.66	0.15	7 16 8.4	116.7	2.3	6.2
11 10		0.15	N. 6 20 22.8	117.0	2.3	6.2

SEPTEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	La Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	N.
1	h m s 11 12 35·70	N. 6 30 24·5	0·1380204	0 31·7	187 4 9·4	N.4 27 27·4	9·601
2	11 19 5·65	5 43 39·6	·1373530	0 34·3	190 44 12·9	4 6 8·8	·609
3	11 25 29·70	4 56 53·9	·1364909	0 36·7	194 18 28·8	3 44 24·8	·614
4	11 31 48·09	4 10 10·8	·1354421	0 39·1	197 47 21·3	3 22 22·3	·620
5	11 38 1·05	3 23 33·6	·1342147	0 41·4	201 11 13·8	3 0 7·3	·625
6	11 44 8·80	2 37 5·3	·1328150	0 43·5	204 30 28·4	2 37 45·0	·629
7	11 50 11·58	1 50 48·5	·1312483	0 45·6	207 45 27·2	2 15 19·9	·634
8	11 56 9·61	1 4 45·8	·1295197	0 47·7	210 56 29·9	1 52 55·9	·638
9	12 2 3·10	N. 0 18 59·5	·1276327	0 49·6	214 3 56·3	1 30 36·4	·642
10	12 7 52·24	S. 0 26 28·2	·1255905	0 51·5	217 8 5·1	1 8 24·2	·645
11	12 13 37·21	1 11 35·2	·1233961	0 53·3	220 9 14·3	0 46 21·8	·649
12	12 19 18·20	1 56 19·6	·1210507	0 55·0	223 7 40·6	0 24 31·5	·652
13	12 24 55·38	2 40 39·6	·1185550	0 56·7	226 3 40·6	N.0 2 55·1	·655
14	12 30 28·90	3 24 33·7	·1159097	0 58·3	228 57 30·3	S.0 18 25·8	·657
15	12 35 58·88	4 7 59·7	·1131153	0 59·9	231 49 24·0	0 39 29·7	·660
16	12 41 25·46	4 50 56·4	·1101704	1 1·4	234 39 36·9	1 0 15·2	·662
17	12 46 48·74	5 33 21·9	·1070746	1 2·8	237 28 22·3	1 20 41·1	·663
18	12 52 8·80	6 15 15·1	·1038253	1 4·2	240 15 54·5	1 40 46·2	·665
19	12 57 25·71	6 56 34·0	·1004209	1 5·6	243 2 26·5	2 0 29·5	·666
20	13 2 39·53	7 37 17·3	·0968589	1 6·9	245 48 11·5	2 19 49·9	·667
21	13 7 50·30	8 17 23·2	·0931355	1 8·1	248 33 21·8	2 38 46·4	·668
22	13 12 58·01	8 56 50·2	·0892479	1 9·3	251 18 9·8	2 57 17·7	·668
23	13 18 2·65	9 35 36·3	·0851914	1 10·4	254 2 48·0	3 15 23·1	·669
24	13 23 4·18	10 13 40·6	·0809613	1 11·5	256 47 28·9	3 33 1·4	·669
25	13 28 2·54	10 51 0·8	·0765533	1 12·5	259 32 24·3	3 50 11·2	·668
26	13 32 57·62	11 27 34·9	·0719617	1 13·5	262 17 46·7	4 6 51·4	·668
27	13 37 49·29	12 3 21·0	·0671809	1 14·4	265 3 48·6	4 23 0·5	·667
28	13 42 37·39	12 38 17·3	·0622047	1 15·3	267 50 4		
29	13 47 21·69	13 12 21·2	·0570266	1 16·1	270 38		
30	13 52 1·94	13 45 30·4	·0516402	1 16·8	273 9		
31	13 56 37·83	S.14 17 42·4	0·0460383	1 17·4			

SEPTEMBER, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
^h 11 ^m 12 ^s 44·34	+16·40	0·15	N. 6° 29' 22·8	-117·0	2·3	6·2
11 19 14·86	16·15	0·15	5 42 32·9	117·1	2·3	6·2
11 25 39·42	15·90	0·16	4 55 42·4	117·1	2·4	6·3
11 31 58·28	15·67	0·16	4 8 54·8	116·9	2·4	6·3
11 38 11·68	15·45	0·16	3 22 13·4	116·6	2·4	6·3
11 44 19·84	15·23	0·16	2 35 41·1	116·1	2·4	6·3
11 50 23·00	15·03	0·16	1 49 20·7	115·6	2·4	6·3
11 56 21·38	14·84	0·16	1 3 14·6	114·9	2·4	6·4
12 2 15·20	14·65	0·16	N. 0 17 25·2	114·2	2·4	6·4
12 8 4·65	14·47	0·16	S. 0 28 5·4	113·3	2·4	6·4
12 13 49·90	14·30	0·17	1 13 15·0	112·4	2·5	6·5
12 19 31·15	14·14	0·17	1 58 1·8	111·4	2·5	6·5
12 25 8·59	13·98	0·17	2 42 23·9	110·4	2·5	6·5
12 30 42·34	13·83	0·17	3 26 19·9	109·3	2·5	6·6
12 36 12·53	13·69	0·17	4 9 47·5	108·0	2·5	6·6
12 41 39·31	13·55	0·17	4 52 45·5	106·8	2·5	6·7
12 47 2·79	13·41	0·17	5 35 12·3	105·4	2·5	6·7
12 52 23·00	13·28	0·18	6 17 6·4	104·0	2·6	6·8
12 57 40·07	13·15	0·18	6 58 26·1	102·6	2·6	6·8
13 2 54·03	13·02	0·18	7 39 9·9	101·0	2·6	6·9
13 8 4·92	12·89	0·18	8 19 16·0	99·5	2·6	6·9
13 13 12·74	12·76	0·18	8 58 43·0	97·8	2·6	7·0
13 18 17·46	12·63	0·18	9 37 29·1	96·1	2·6	7·0
13 23 19·06	12·50	0·18	10 15 32·9	94·3	2·7	7·1
13 28 17·48	12·37	0·18	10 52 52·4	92·4	2·7	7·2
13 33 12·59	12·23	0·19	11 29 25·6	90·4	2·8	7·3
13 38 4·27	12·08	0·19	12 5 10·5	88·3	2·8	7·4
13 42 52·35	11·93	0·19	12 40 5·4	86·2	2·8	7·4
13 47 36·60	11·76	0·19	13 14 7·6	84·0	2·8	7·5
13 52 16·77	11·58	0·20	13 47 14·9	81·6	2·9	7·6
		0·20	S. 14 19 24·6	-79·2	2·9	7·7

OCTOBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	No.
	h m s	o ' "		h m	o ' "	o ' "	
1	13 56 37.83	S. 14 17 42.4	0.0460383	1 17.4	276 18 37.5	S. 5 21 53.1	9.66130
2	14 1 9.01	14 48 54.4	.0402134	1 18.0	279 11 5.0	5 35 0.8	.65911
3	14 5 35.05	15 19 3.3	.0341586	1 18.5	282 5 29.7	5 47 25.7	.65670
4	14 9 55.46	15 48 6.0	.0278665	1 18.9	285 2 5.2	5 59 5.1	.65413
5	14 14 9.67	16 15 58.7	.0213300	1 19.2	288 1 6.3	6 9 56.1	.65130
6	14 18 17.04	16 42 37.7	.0145421	1 19.3	291 2 48.7	6 19 55.3	.64735
7	14 22 16.83	17 7 58.5	.0074965	1 19.4	294 7 27.3	6 28 59.2	.64330
8	14 26 8.19	17 31 56.6	0.0001881	1 19.3	297 15 18.6	6 37 3.7	.63910
9	14 29 50.20	17 54 26.6	9.9926121	1 19.0	300 26 39.8	6 44 4.6	.63500
10	14 33 21.76	18 15 22.7	.9847663	1 18.6	303 41 48.0	6 49 56.9	.63100
11	14 36 41.68	18 34 38.4	.9766499	1 18.0	307 1 1.6	6 54 35.6	.62700
12	14 39 48.65	18 52 6.8	.9682647	1 17.2	310 24 39.7	6 57 54.9	.62300
13	14 42 41.15	19 7 39.6	.9596176	1 16.1	313 53 2.0	6 59 48.6	.61900
14	14 45 17.58	19 21 8.2	.9507185	1 14.7	317 26 28.6	7 0 10.1	.61500
15	14 47 36.14	19 32 22.5	.9415838	1 13.1	321 5 21.1	6 58 52.3	.61100
16	14 49 34.93	19 41 11.9	.9322381	1 11.1	324 50 0.6	6 55 47.5	.60700
17	14 51 11.89	19 47 23.4	.9227156	1 8.8	328 40 49.3	6 50 47.7	.59900
18	14 52 24.87	19 50 44.7	.9130601	1 6.0	332 38 9.3	6 43 44.6	.58800
19	14 53 11.66	19 51 1.2	.9033299	1 2.9	336 42 24.3	6 34 29.6	.58200
20	14 53 30.10	19 47 57.5	.8936007	0 59.2	340 53 55.4	6 22 53.9	.57300
21	14 53 18.11	19 41 18.2	.8839660	0 55.1	345 13 5.8	6 8 48.9	.56900
22	14 52 33.90	19 30 47.3	.8745407	0 50.4	349 40 14.1	5 52 6.4	.56000
23	14 51 16.07	19 16 10.6	.8654625	0 45.1	354 15 42.4	5 32 39.0	.55300
24	14 49 23.89	18 57 15.7	.8568937	0 39.3	358 59 46.7	5 10 20.5	.54800
25	14 46 57.42	18 33 54.7	.8490186	0 33.0	3 52 41.5	4 45 6.2	.54100
26	14 43 57.85	18 6 5.8	.8420410	0 26.0	8 54 37.8	4 16 54.1	.53400
27	14 40 27.71	17 33 56.3	.8361763	0 18.6	14 5 40.9	3 45 44.8	.52700
28	14 36 30.95	16 57 44.6	.8316416	0 10.8	19 25 50.9	3 11 43.0	.52100
29	14 32 13.04	16 18 1.6	.8286407	{ 2 5.1 }	24 55 0.9	2 34 57.9	.51500
30	14 27 40.86	15 35 33.0	.8273483	23 45.6	30 32 56.0	1 55 43.5	.50900
31	14 23 2.43	14 51 17.4	.8278928	23 37.1	36 19 11.5	1 14 19.8	.50400
32	14 18 26.48	S. 14 6 23.8	9.8303408	23 28.8	42 13 13.7	S. 0 31	

OCTOBER, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Her. Par.
h m s 13 56 52.54	+ 11.39	0.20	S. 14 19 24.6	- 79.2	2.9	7.7
14 1 23.56	11.19	0.20	14 50 34.1	76.6	2.9	7.8
14. 5 49.41	10.96	0.21	15 20 40.1	73.9	3.0	8.0
14.10 9.56	10.71	0.22	15 49 39.5	71.0	3.1	8.1
14.14 23.45	10.44	0.22	16 17 22.6	68.0	3.1	8.2
14.18 30.46	10.14	0.22	16 44 3.4	64.9	3.1	8.3
14.22 29.83	9.80	0.23	17 9 20.0	61.5	3.2	8.4
14.26 20.68	9.43	0.23	17 33 13.3	57.9	3.2	8.6
14 30 2.10	9.01	0.23	17 55 32.1	54.1	3.3	8.7
14 33 32.99	8.55	0.24	18 16 22.4	50.0	3.4	8.9
14 36 52.15	8.04	0.24	18 35 32.0	45.7	3.4	9.1
14 39 58.28	7.46	0.25	18 52 59.7	41.0	3.5	9.2
14 42 49.84	6.82	0.25	19 8 25.4	36.0	3.5	9.4
14 45 25.23	6.11	0.26	19 21 46.6	30.6	3.6	9.6
14 47 42.67	5.33	0.26	19 32 53.1	24.8	3.7	9.8
14 49 40.26	4.46	0.27	19 41 34.0	18.5	3.8	10.0
14 51 15.94	3.50	0.27	19 47 37.0	11.7	3.9	10.3
14 52 27.62	2.46	0.28	19 50 49.6	- 4.3	4.0	10.5
14 53 13.08	1.32	0.28	19 50 57.5	+ 3.7	4.1	10.7
14 53 30.23	+ 0.09	0.29	19 47 45.3	12.6	4.2	11.0
14 53 17.03	- 1.21	0.29	19 40 58.4	21.7	4.2	11.2
14 52 31.75	2.58	0.30	19 30 20.8	31.6	4.3	11.5
14 51 13.07	3.99	0.31	19 15 39.0	42.0	4.4	11.7
14 49 20.34	5.41	0.32	18 56 41.0	52.9	4.5	11.9
14 46 53.67	6.81	0.33	18 33 19.5	64.0	4.6	12.2
14 43 54.31	8.12	0.33	18 5 33.2	74.9	4.7	12.4
14 40 24.79	9.31	0.34	17 33 29.7	85.3	4.7	12.5
14 36 29.08	10.30	0.34	16 57 27.5	94.7	4.8	12.6
{14 36 29.08}	{10.30}	{0.34}	{16 57 27.5}	{94.7}	{4.8}	{12.6}
{14 37 44.22}	{11.54}	{0.33}	{14 51 44.2}	{111.3}	{4.8}	{12.8}
14 37 44.22	11.54	0.33	14 51 44.2	111.3	4.8	12.8
14	11.26	0.33	14 7 6.6	111.3	4.8	12.7
14	12	0.32	S.13 23 4.9	+108.3	4.7	12.5

NOVEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	No
	<small>h m s</small>	<small>° ' "</small>	<small>° ' "</small>	<small>h m</small>	<small>° ' "</small>	<small>° ' "</small>	
1	14 18 26.48	S. 14 6 23.8	9.8303408	23 28.8	42 13 13.7	S. 0 31 12.5	9.4985
2	14 14 1.93	13 22 8.2	.8346876	23 20.8	48 14 17.1	N. 0 13 7.1	.4955
3	14 9 57.19	12 39 46.9	.8408561	23 13.3	54 21 27.0	0 58 2.2	.4925
4	14 6 19.78	12 0 31.8	.8487020	23 6.3	60 33 37.5	1 42 52.2	.4895
5	14 3 15.84	11 25 24.6	.8580247	22 59.9	66 49 33.2	2 26 54.0	.4865
6	14 0 49.83	10 55 13.2	.8685878	22 54.2	73 7 53.0	3 9 23.6	.4835
7	13 59 4.56	10 30 30.7	.8801344	22 49.2	79 27 8.5	3 49 38.4	.4805
8	13 58 1.27	10 11 34.6	.8924071	22 44.9	85 45 48.5	4 26 59.4	.4775
9	13 57 39.80	9 58 28.5	.9051610	22 41.2	92 2 23.2	5 0 52.8	.4745
10	13 57 58.88	9 51 4.5	.9181743	22 38.2	98 15 24.9	5 30 51.8	.4715
11	13 58 56.43	9 49 5.6	.9312541	22 35.8	104 23 31.7	5 56 37.0	.4685
12	14 0 29.79	9 52 8.6	.9442400	22 33.9	110 25 31.5	6 17 57.3	.4655
13	14 2 36.03	9 59 46.6	.9570022	22 32.6	116 20 20.7	6 34 49.1	.4625
14	14 5 12.08	10 11 30.7	.9694406	22 31.7	122 7 7.3	6 47 15.6	.4595
15	14 8 14.89	10 26 51.4	.9814805	22 31.1	127 45 10.7	6 55 26.1	.4565
16	14 11 41.55	10 45 20.2	9.9930693	22 31.0	133 14 1.9	6 59 34.3	.4535
17	14 15 29.36	11 6 30.1	0.0041729	22 31.1	138 33 22.7	6 59 57.1	.4505
18	14 19 35.82	11 29 55.6	.0147724	22 31.5	143 43 4.1	6 56 53.7	.4475
19	14 23 58.68	11 55 13.8	.0248601	22 32.2	148 43 6.4	6 50 44.3	.4445
20	14 28 35.95	12 22 3.6	.0344373	22 33.1	153 33 36.1	6 41 49.4	.4415
21	14 33 25.90	12 50 6.3	.0435115	22 34.1	158 14 46.3	6 30 28.8	.4385
22	14 38 26.99	13 19 5.3	.0520953	22 35.4	162 46 53.9	6 17 1.5	.4355
23	14 43 37.88	13 48 45.9	.0602040	22 36.8	167 10 19.4	6 1 45.4	.4325
24	14 48 57.45	14 18 54.9	.0678562	22 38.3	171 25 26.2	5 44 56.6	.4295
25	14 54 24.70	14 49 20.7	.0750701	22 39.9	175 32 38.7	5 26 50.0	.4265
26	14 59 58.81	15 19 53.5	.0818655	22 41.6	179 32 22.6	5 7 38.9	.4235
27	15 5 39.03	15 50 24.0	.0882615	22 43.4	183 25 3.3	4 47 35.0	.4205
28	15 11 24.80	16 20 44.7	.0942777	22 45.3	187 11 7.3	4 26 48.8	.4175
29	15 17 15.57	16 50 48.5	.0999324	22 47.3	190 50 59.6	4 5 29.3	.4145
30	15 23 10.92	17 20 29.4	.1052431	22 49.4	194 25 5.2	3 43 44.7	.4115
31	15 29 10.48	S. 17 49 42.0	0.1102270	22 51.5	197 53 48.3	N. 0 0 0.0	.4085

NOVEMBER, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
<small>h m s</small>	<small>s</small>	<small>s</small>	<small>o ' "</small>	<small>"</small>	<small>"</small>	<small>"</small>
14 14 7.49	-10.62	0.32	S. 13 23 4.9	+108.3	4.7	12.5
14 10 3.53	9.65	0.32	12 40 54.1	102.1	4.7	12.4
14 6 26.34	8.40	0.32	12 1 44.8	93.2	4.6	12.2
14 3 22.05	6.93	0.31	11 26 38.2	82.0	4.5	11.9
14 0 55.13	5.30	0.31	10 56 22.7	69.1	4.4	11.6
13 59 8.46	3.58	0.30	10 31 31.1	55.1	4.3	11.3
13 58 3.39	1.84	0.29	10 12 22.5	40.6	4.2	11.0
13 57 39.89	-0.13	0.28	9 59 1.0	26.2	4.0	10.7
13 57 56.81	+1.52	0.27	9 51 20.2	+12.3	3.9	10.4
13 58 52.17	3.07	0.26	9 49 4.1	-0.8	3.8	10.1
14 0 23.37	4.51	0.25	9 51 49.9	12.9	3.7	9.8
14 2 27.59	5.82	0.24	9 59 12.0	23.8	3.6	9.5
14 5 1.79	7.01	0.23	10 10 41.3	33.5	3.5	9.2
14 8 2.94	8.07	0.23	10 25 49.1	42.0	3.4	9.0
14 11 28.15	9.01	0.22	10 44 6.8	49.3	3.3	8.7
14 15 14.69	9.85	0.22	11 5 7.4	55.6	3.2	8.5
14 19 20.08	10.59	0.21	11 28 25.3	60.8	3.1	8.3
14 23 42.09	11.23	0.21	11 53 37.7	65.1	3.1	8.1
14 28 18.64	11.80	0.20	12 20 23.2	68.6	3.0	7.9
14 33 8.06	12.30	0.19	12 48 22.9	71.3	2.9	7.8
14 38 8.75	12.74	0.19	13 17 20.3	73.4	2.9	7.6
14 43 19.35	13.13	0.19	13 47 0.4	74.9	2.8	7.5
14 48 38.74	13.48	0.19	14 17 9.6	75.8	2.8	7.4
14 54 5.92	13.78	0.19	14 47 36.7	76.4	2.7	7.2
14 59 40.05	14.06	0.19	15 18 11.4	76.5	2.7	7.1
15 5 20.36	14.30	0.19	15 48 44.5	76.2	2.6	7.0
15 11 6.27	14.52	0.19	16 19 8.2	75.7	2.6	6.9
15 16 57.26	14.72	0.19	16 49 15.4	74.9	2.6	6.8
15 22 52.88	14.91	0.18	17 19 0.2	73.8	2.5	6.7
15 28 22.75	15.08	0.18	17 48 16.7	72.5	2.5	6.7
1.	.24	0.18	S. 18 17 0.5	-71.1	2.5	6.6

DECEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. d. Rad. Val.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	^h ^m ^s	^o ['] ["]		^h ^m	^o ['] ["]	^o ['] ["]	
1	15 29 10.48	S. 17 49 42.0	0.1102270	22 51.5	197 53 48.3	N. 3 21 41.7	9.600211
2	15 35 13.91	18 18 21.6	.1148996	22 53.6	201 17 31.9	2 59 26.4	.625171
3	15 41 20.97	18 46 23.4	.1192762	22 55.9	204 36 38.5	2 37 4.0	.629271
4	15 47 31.45	19 13 44.3	.1233702	22 58.2	207 51 29.3	2 14 38.9	.634396
5	15 53 45.14	19 40 20.3	.1271943	23 0.5	211 2 25.0	1 52 15.0	.638473
6	16 0 1.89	20 6 8.4	.1307615	23 2.9	214 9 45.2	1 29 55.7	.642573
7	16 6 21.58	20 31 5.7	.1340818	23 5.3	217 13 48.5	1 7 43.8	.646007
8	16 12 44.07	20 55 9.8	.1371661	23 7.8	220 14 52.5	0 45 41.7	.649372
9	16 19 9.27	21 18 17.8	.1400233	23 10.3	223 13 14.2	0 23 51.8	.652464
10	16 25 37.10	21 40 28.0	.1426623	23 12.9	226 9 10.2	N. 0 2 15.8	.655291
11	16 32 7.48	22 1 38.0	.1450905	23 15.5	229 2 55.9	S. 0 19 4.7	.657851
12	16 38 40.34	22 21 45.9	.1473150	23 18.2	231 54 46.6	0 40 8.0	.660144
13	16 45 15.64	22 40 49.7	.1493421	23 20.8	234 44 56.6	1 0 52.9	.662173
14	16 51 53.30	22 58 47.7	.1511773	23 23.6	237 33 40.2	1 21 18.2	.663957
15	16 58 33.27	23 15 38.2	.1528258	23 26.3	240 21 11.0	1 41 22.7	.665438
16	17 5 15.49	23 31 19.4	.1542916	23 29.1	243 7 41.0	2 1 5.3	.666677
17	17 11 59.91	23 45 49.8	.1555785	23 32.0	245 53 24.7	2 20 24.9	.667655
18	17 18 46.49	23 59 8.0	.1566898	23 34.9	248 38 34.4	2 39 20.6	.668371
19	17 25 35.15	24 11 12.3	.1576281	23 37.8	251 23 22.1	2 57 51.3	.668827
20	17 32 25.85	24 22 1.3	.1583955	23 40.7	254 8 0.8	3 15 56.0	.669024
21	17 39 18.51	24 31 33.6	.1589933	23 43.7	256 52 42.1	3 33 33.4	.668960
22	17 46 13.07	24 39 47.7	.1594222	23 46.7	259 37 38.4	3 50 42.3	.668633
23	17 53 9.42	24 46 42.3	.1596831	23 49.7	262 23 2.0	4 7 21.6	.668051
24	18 0 7.53	24 52 16.0	.1597752	23 52.8	265 9 5.3	4 23 29.7	.667206
25	18 7 7.28	24 56 27.4	.1596988	23 55.8	267 56 0.5	4 39 5.1	.666104
26	18 14 8.59	24 59 15.5	.1594515	23 59.0	270 44 0.6	4 54 6.2	.664732
27	18 21 11.33	25 0 38.8	.1590324	* *	273 33 17.7	5 8 31.2	.663102
28	18 28 15.42	25 0 36.1	.1584387	0 2.1	276 24 5.1	5 22 18.0	.661207
29	18 35 20.72	24 59 6.4	.1576680	0 5.2	279 16 36.2	5 35 24.4	.659040
30	18 42 27.12	24 56 8.4	.1567163	0 8.4	282 11 4.8	5 47 47.9	.656624
31	18 49 34.47	24 51 41.1	.1555799	0 11.6	285 7 44.9	5 59 25.9	.653933
32	18 56 42.62	S. 24 45 43.3	0.1542530	0 14.8	288 6 51.1	S. 6 10 15.4	9.650974

DECEMBER, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi- diameter.</i>	<i>Hor. Par.</i>
^h 15 ^m 34 ^s 56·53	+ 15·24	0·18	S. 18 17 0·5	- 71·1	2·5	6·6
15 41 3·97	15·38	0·18	18 45 6·7	69·4	2·5	6·5
15 47 14·87	15·52	0·18	19 12 32·1	67·7	2·5	6·5
15 53 29·02	15·66	0·17	19 39 12·7	65·7	2·4	6·4
15 59 46·26	15·78	0·17	20 5 5·4	63·7	2·4	6·4
16 6 6·47	15·90	0·17	20 30 7·3	61·5	2·4	6·3
16 12 29·50	16·02	0·17	20 54 16·0	59·2	2·4	6·3
16 18 53·27	16·13	0·17	21 17 28·6	56·8	2·3	6·2
16 25 23·68	16·24	0·17	21 39 43·1	54·4	2·3	6·2
16 31 54·67	16·34	0·17	22 0 57·3	51·8	2·3	6·1
16 38 28·16	16·45	0·17	22 21 9·5	49·2	2·3	6·1
16 45 4·12	16·55	0·17	22 40 17·4	46·5	2·3	6·1
16 51 42·45	16·65	0·17	22 58 19·3	43·7	2·3	6·1
16 58 23·12	16·74	0·17	23 15 13·5	40·8	2·3	6·0
17 5 6·05	16·84	0·17	23 30 58·2	37·9	2·3	6·0
17 11 51·22	16·93	0·17	23 45 31·8	34·9	2·3	6·0
17 18 38·55	17·02	0·17	23 58 53·2	31·9	2·3	6·0
17 25 27·99	17·10	0·17	24 11 0·3	28·8	2·3	6·0
17 32 19·48	17·19	0·17	24 21 51·8	25·6	2·3	6·0
17 39 12·97	17·27	0·17	24 31 26·4	22·3	2·3	6·0
17 46 8·36	17·35	0·17	24 39 42·5	19·0	2·2	5·9
17 53 5·55	17·42	0·17	24 46 38·8	15·7	2·2	5·9
18 0 4·53	17·49	0·17	24 52 13·9	12·2	2·2	5·9
18 7 5·16	17·56	0·16	24 56 26·3	8·8	2·2	5·9
18 14 7·36	17·62	0·16	24 59 15·1	5·3	2·2	5·9
18 21 11·02	17·68	0·16	25 0 38·7	- 1·7	2·2	5·9
* * *	*	*	* * *	*	*	*
18 28 16·04	17·74	0·17	25 0 36·0	+ 1·9	2·3	6·0
18 35 22·27	17·78	0·17	24 59 6·0	5·6	2·3	6·0
18 42 29·61	17·83	0·17	24 56 7·1	9·3	2·3	6·0
18 49 37·92	17·86	0·17	24 51 38·5	13·1	2·3	6·0
18 56 47·03	+ 17·89	0·17	S. 24 45 39·1	+ 16·9	2·3	6·0

JANUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad. V.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ' "		h m	° ' "	° ' "	
1	17 40 38.76	S. 23 6 39.6	0.2113782	22 59.2	244 45 43.5	N. 0 37 0.1	9.86059
2	17 46 6.06	23 11 20.3	.2120929	23 0.7	246 21 7.6	0 31 25.7	.86066
3	17 51 33.73	23 15 18.4	.2127962	23 2.2	247 56 29.6	0 25 50.0	.86073
4	17 57 1.72	23 18 33.7	.2134880	23 3.8	249 31 49.4	0 20 13.1	.86081
5	18 2 29.96	23 21 6.1	.2141682	23 5.3	251 7 7.3	0 14 35.5	.86088
6	18 7 58.40	23 22 55.3	.2148369	23 6.9	252 42 23.2	0 8 57.3	.86095
7	18 13 26.98	23 24 1.2	.2154942	23 8.4	254.17 37.3	N. 0 3 18.8	.86102
8	18 18 55.63	23 24 23.6	.2161402	23 9.9	255 52 49.6	S. 0 2 19.8	.86109
9	18 24 24.28	23 24 2.5	.2167748	23 11.4	257 28 0.1	0 7 58.2	.86115
10	18 29 52.87	23 22 58.1	.2173977	23 13.0	259 3 8.9	0 13 36.1	.86122
11	18 35 21.33	23 21 10.3	.2180093	23 14.5	260 38 16.1	0 19 13.2	.86128
12	18 40 49.61	23 18 39.1	.2186097	23 16.0	262 13 21.8	0 24 49.4	.86134
13	18 46 17.64	23 15 24.7	.2191989	23 17.5	263 48 26.1	0 30 24.4	.86140
14	18 51 45.35	23 11 27.2	.2197770	23 19.0	265 23 28.9	0 35 57.8	.86146
15	18 57 12.69	23 6 46.7	.2203439	23 20.5	266 58 30.5	0 41 29.6	.86152
16	19 2 39.60	23 1 23.5	.2208997	23 22.0	268 33 30.8	0 46 59.4	.86157
17	19 8 6.01	22 55 17.7	.2214445	23 23.6	270 8 29.9	0 52 26.9	.86163
18	19 13 31.87	22 48 29.7	.2219787	23 25.1	271 43 27.9	0 57 51.9	.86169
19	19 18 57.12	22 40 59.7	.2225022	23 26.5	273 18 24.9	1 3 14.2	.86175
20	19 24 21.72	22 32 48.0	.2230153	23 28.0	274 53 21.0	1 8 33.5	.86179
21	19 29 45.62	22 23 54.9	.2235179	23 29.4	276 28 16.1	1 13 49.7	.86184
22	19 35 8.76	22 14 20.9	.2240102	23 30.9	278 3 10.5	1 19 2.4	.86189
23	19 40 31.09	22 4 6.4	.2244922	23 32.3	279 38 4.1	1 24 11.4	.86194
24	19 45 52.58	21 53 11.7	.2249639	23 33.7	281 12 57.1	1 29 16.5	.86199
25	19 51 13.19	21 41 37.4	.2254254	23 35.0	282 47 49.4	1 34 17.5	.86204
26	19 56 32.88	21 29 23.8	.2258769	23 36.4	284 22 41.3	1 39 14.2	.86209
27	20 1 51.62	21 16 31.5	.2263183	23 37.8	285 57 32.7	1 44 6.2	.86214
28	20 7 9.37	21 3 1.0	.2267495	23 39.1	287 32 23.7	1 48 53.5	.86219
29	20 12 26.10	20 48 52.7	.2271705	23 40.4	289 7 14.4	1 53 35.8	.86224
30	20 17 41.78	20 34 7.3	.2275815	23 41.7	290 42 4.9	1 58 12.8	.86229
31	20 22 56.37	20 18 45.3	.2279824	23 43.0	292 16 55.2	2 2 44.4	.86234
32	20 28 9.87	S. 20 9 47.4	0.2283729	23 44.3	293 51 45.4	S. 2	.86239

JANUARY, 1842.

At Transit over the Meridian of Greenwich.

Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 17 ^m 45 ^s 52 ·24	+ 13 ·66	^s 0 ·37	S. 23 11 9 ·8	- 11 ·0	["] 5 ·1	["] 5 ·3
2	17 51 20 ·23	13 ·67	0 ·37	23 15 9 ·5	9 ·1	5 ·1	5 ·3
3	17 56 48 ·35	13 ·69	0 ·37	23 18 26 ·8	7 ·3	5 ·1	5 ·3
4	18 2 17 ·14	13 ·70	0 ·37	23 21 1 ·1	5 ·5	5 ·0	5 ·2
5	18 7 43 ·93	13 ·70	0 ·37	23 22 52 ·1	3 ·7	5 ·0	5 ·2
6	18 13 14 ·85	13 ·71	0 ·37	23 23 59 ·6	1 ·9	5 ·0	5 ·2
7	18 18 43 ·84	13 ·71	0 ·37	23 24 23 ·6	- 0 ·1	5 ·0	5 ·2
8	18 24 12 ·84	13 ·70	0 ·37	23 24 4 ·0	+ 1 ·7	5 ·0	5 ·2
9	18 29 41 ·78	13 ·70	0 ·37	23 23 1 ·0	3 ·5	5 ·0	5 ·2
0	18 35 10 ·60	13 ·70	0 ·37	23 21 14 ·5	5 ·3	5 ·0	5 ·2
1	18 40 39 ·24	13 ·69	0 ·37	23 18 44 ·6	7 ·2	5 ·0	5 ·2
2	18 46 7 ·63	13 ·68	0 ·37	23 15 31 ·3	9 ·0	5 ·0	5 ·2
3	18 51 35 ·70	13 ·66	0 ·36	23 11 34 ·9	10 ·8	5 ·0	5 ·2
4	18 57 3 ·39	13 ·65	0 ·36	23 6 55 ·3	12 ·5	5 ·0	5 ·2
5	19 2 30 ·66	13 ·63	0 ·36	23 1 32 ·9	14 ·3	5 ·0	5 ·2
6	19 7 57 ·42	13 ·60	0 ·36	22 55 27 ·8	16 ·1	5 ·0	5 ·2
7	19 13 23 ·64	13 ·58	0 ·36	22 48 40 ·3	17 ·8	5 ·0	5 ·2
8	19 18 49 ·24	13 ·55	0 ·36	22 41 11 ·1	19 ·6	4 ·9	5 ·1
9	19 24 14 ·18	13 ·52	0 ·36	22 32 59 ·9	21 ·3	4 ·9	5 ·1
0	19 29 38 ·42	13 ·49	0 ·35	22 24 7 ·2	23 ·0	4 ·9	5 ·1
1	19 35 1 ·90	13 ·46	0 ·35	22 14 33 ·6	24 ·7	4 ·9	5 ·1
2	19 40 24 ·57	13 ·43	0 ·35	22 4 19 ·3	26 ·4	4 ·9	5 ·1
3	19 45 46 ·40	13 ·39	0 ·35	21 53 24 ·7	28 ·1	4 ·9	5 ·1
4	19 51 7 ·34	13 ·35	0 ·35	21 41 50 ·5	29 ·7	4 ·9	5 ·1
5	19 56 27 ·35	13 ·31	0 ·35	21 29 36 ·9	31 ·4	4 ·9	5 ·1
6	20 1 46 ·41	13 ·27	0 ·35	21 16 44 ·5	33 ·0	4 ·9	5 ·1
7	20 7 4 ·48	13 ·23	0 ·35	21 3 13 ·8	34 ·6	4 ·9	5 ·1
8	20 12 21 ·52	13 ·19	0 ·35	20 49 5 ·3	36 ·1	4 ·9	5 ·1
9	20 17 37 ·50	13 ·14	0 ·34	20 34 19 ·6	37 ·7	4 ·9	5 ·1
0	20 22 52 ·39	13 ·10	0 ·34	20 18 57 ·2	39 ·2	4 ·9	5 ·1
1	20	13 ·05	0 ·34	20 2 58 ·9	40 ·7	4 ·9	5 ·1
2	20	3 ·00	0 ·34	S. 19 46 25 ·1	+ 42 ·1	4 ·9	5 ·1

FEBRUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ' "		h m	° ' "	° ' "	
1	20 28 9.87	S. 20 2 47.4	0.2283729	23 44.3	293 51 45.4	S. 2 7 10.4	9.862195
2	20 33 22.25	19 46 14.1	0.2287532	23 45.5	295 26 35.6	2 11 30.5	9.862215
3	20 38 33.49	19 29 6.0	0.2291230	23 46.8	297 1 25.8	2 15 44.7	9.862235
4	20 43 43.57	19 11 23.9	0.2294825	23 48.0	298 36 16.1	2 19 52.6	9.862255
5	20 48 52.47	18 53 8.3	0.2298315	23 49.2	300 11 6.6	2 23 54.1	9.862275
6	20 54 0.18	18 34 20.0	0.2301699	23 50.3	301 45 57.2	2 27 49.1	9.862295
7	20 59 6.70	18 14 59.6	0.2304978	23 51.5	303 20 48.1	2 31 37.2	9.862315
8	21 4 12.00	17 55 7.9	0.2308150	23 52.6	304 55 39.2	2 35 18.5	9.862335
9	21 9 16.09	17 34 45.6	0.2311215	23 53.7	306 30 30.7	2 38 52.7	9.862355
10	21 14 18.97	17 13 53.4	0.2314173	23 54.8	308 5 22.7	2 42 19.6	9.862375
11	21 19 20.62	16 52 32.1	0.2317024	23 55.9	309 40 15.1	2 45 39.1	9.862395
12	21 24 21.05	16 30 42.4	0.2319769	23 56.9	311 15 8.0	2 48 51.0	9.862415
13	21 29 20.26	16 8 25.0	0.2322407	23 57.9	312 50 1.5	2 51 55.3	9.862435
14	21 34 18.27	15 45 40.7	0.2324940	23 58.9	314 24 55.7	2 54 51.7	9.862455
15	21 39 15.07	15 22 30.3	0.2327366	23 59.9	315 59 50.5	2 57 40.1	9.862475
16	21 44 10.67	14 58 54.5	0.2329687	* *	317 34 46.0	3 0 20.4	9.862495
17	21 49 5.09	14 34 54.1	0.2331903	0 0.9	319 9 42.3	3 2 52.5	9.862515
18	21 53 58.35	14 10 29.9	0.2334014	0 1.8	320 44 39.4	3 5 16.2	9.862535
19	21 58 50.47	13 45 42.6	0.2336022	0 2.8	322 19 37.4	3 7 31.5	9.862555
20	22 3 41.45	13 20 32.9	0.2337925	0 3.7	323 54 36.2	3 9 38.3	9.862575
21	22 8 31.33	12 55 1.6	0.2339725	0 4.6	325 29 36.0	3 11 36.4	9.862595
22	22 13 20.13	12 29 9.6	0.2341421	0 5.4	327 4 36.7	3 13 25.7	9.862615
23	22 18 7.87	12 2 57.4	0.2343015	0 6.3	328 39 38.4	3 15 6.2	9.862635
24	22 22 54.58	11 36 25.9	0.2344505	0 7.1	330 14 41.1	3 16 37.8	9.862655
25	22 27 40.29	11 9 35.9	0.2345892	0 7.9	331 49 44.9	3 18 0.4	9.862675
26	22 32 25.04	10 42 28.0	0.2347176	0 8.7	333 24 49.7	3 19 13.9	9.862695
27	22 37 8.84	10 15 3.0	0.2348355	0 9.5	334 59 55.7	3 20 18.4	9.862715
28	22 41 51.73	9 47 21.7	0.2349429	0 10.3	336 35 2.8	3 21 13.6	9.862735
29	22 46 33.75	S. 9 19 24.8	0.2350398	0 11.1	338 10 11.0	S. 3 21 59.7	9.862755

FEBRUARY, 1842.

At Transit over the Meridian of Greenwich.

Month.	Apparent Right Ascension.			Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.			Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
	h	m	s			°	'	"			
1	20	33	18.86	+13.00	0.34	S. 19	46	25.1	+42.1	4.9	5.1
2	20	38	30.38	12.96	0.34	19	29	16.4	43.6	4.9	5.1
3	20	43	40.73	12.91	0.34	19	11	33.7	45.0	4.9	5.1
4	20	48	49.90	12.86	0.34	18	53	17.5	46.4	4.8	5.0
5	20	53	57.87	12.81	0.34	18	34	28.5	47.7	4.8	5.0
6	20	59	4.65	12.76	0.34	18	15	7.4	49.0	4.8	5.0
7	21	4	10.20	12.71	0.34	17	53	15.0	50.3	4.8	5.0
8	21	9	14.53	12.66	0.34	17	34	51.9	51.6	4.8	5.0
9	21	14	17.65	12.60	0.34	17	13	58.9	52.8	4.8	5.0
10	21	19	19.53	12.55	0.34	16	52	36.7	54.0	4.8	5.0
11	21	24	20.19	12.50	0.33	16	30	46.2	55.2	4.8	5.0
12	21	29	19.62	12.45	0.33	16	8	27.9	56.3	4.8	5.0
13	21	34	17.85	12.40	0.33	15	45	42.7	57.4	4.8	5.0
14	21	39	14.85	12.35	0.33	15	22	31.3	58.5	4.8	5.0
15	21	44	10.65	12.30	0.33	14	58	54.5	59.5	4.8	5.0
16	*	*	*	*	*	*	*	*	*	*	*
17	21	49	5.27	12.25	0.33	14	34	53.2	60.6	4.8	5.0
18	21	53	58.73	12.20	0.33	14	10	28.0	61.5	4.8	5.0
19	21	58	51.03	12.16	0.33	13	45	39.7	62.5	4.8	5.0
20	22	3	42.19	12.11	0.33	13	20	29.0	63.4	4.8	5.0
21	22	8	32.25	12.06	0.33	12	54	56.7	64.1	4.8	5.0
22	22	13	21.21	12.02	0.33	12	29	3.6	65.1	4.8	5.0
23	22	18	9.12	11.97	0.33	12	2	50.4	66.0	4.8	5.0
24	22	22	55.99	11.93	0.33	11	36	17.9	66.7	4.8	5.0
25	22	27	41.86	11.89	0.33	11	9	26.9	67.5	4.8	5.0
26	22	32	26.77	11.85	0.33	10	42	18.0	68.2	4.8	5.0
27	22	37	10.72	11.81	0.32	10	14	52.0	68.9	4.8	5.0
28	22	41	53.75	11.77	0.32	9	47	9.8	69.6	4.8	5.0
29	22	46	35.91	+11.74	0.32	S. 9	19	11.9	+70.2	4.8	5.0

MARCH, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. V.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	22 46 33 ^{h m s} .75	S. 9 19 24 ^{o ' "} .8	0 [.] 2350398	0 11 ^{h m} .1	338 0 11 ^{o ' "} .0	S. 3 21 59 ^{o ' "} .7	9 [.] 861934
2	22 51 14 ^{h m s} .93	8 51 13 ^{o ' "} .0	*2351259	0 11 ^{h m} .8	339 45 20 ^{o ' "} .4	3 22 36 ^{o ' "} .5	*861899
3	22 55 55 ^{h m s} .31	8 22 47 ^{o ' "} .2	*2352013	0 12 ^{h m} .5	341 20 31 ^{o ' "} .0	3 23 4 ^{o ' "} .0	*861852
4	23 0 34 ^{h m s} .92	7 54 8 ^{o ' "} .0	*2352658	0 13 ^{h m} .2	342 55 42 ^{o ' "} .8	3 23 22 ^{o ' "} .2	*861804
5	23 5 13 ^{h m s} .80	7 25 16 ^{o ' "} .3	*2353192	0 13 ^{h m} .9	344 30 55 ^{o ' "} .8	3 23 31 ^{o ' "} .1	*861755
6	23 9 51 ^{h m s} .99	6 56 12 ^{o ' "} .7	*2353615	0 14 ^{h m} .6	346 6 10 ^{o ' "} .1	3 23 30 ^{o ' "} .6	*861711
7	23 14 29 ^{h m s} .51	6 26 58 ^{o ' "} .1	*2353926	0 15 ^{h m} .3	347 41 25 ^{o ' "} .7	3 23 20 ^{o ' "} .8	*861664
8	23 19 6 ^{h m s} .41	5 57 33 ^{o ' "} .2	*2354123	0 16 ^{h m} .0	349 16 42 ^{o ' "} .6	3 23 1 ^{o ' "} .6	*861609
9	23 23 42 ^{h m s} .73	5 27 58 ^{o ' "} .7	*2354205	0 16 ^{h m} .7	350 52 0 ^{o ' "} .8	3 22 33 ^{o ' "} .1	*861551
10	23 28 18 ^{h m s} .49	4 58 15 ^{o ' "} .4	*2354172	0 17 ^{h m} .4	352 27 20 ^{o ' "} .3	3 21 55 ^{o ' "} .2	*861495
11	23 32 53 ^{h m s} .75	4 28 24 ^{o ' "} .1	*2354022	0 18 ^{h m} .0	354 2 41 ^{o ' "} .2	3 21 8 ^{o ' "} .1	*861440
12	23 37 28 ^{h m s} .54	3 58 25 ^{o ' "} .5	*2353755	0 18 ^{h m} .6	355 38 3 ^{o ' "} .4	3 20 11 ^{o ' "} .6	*861383
13	23 42 2 ^{h m s} .90	3 28 20 ^{o ' "} .4	*2353369	0 19 ^{h m} .3	357 13 27 ^{o ' "} .0	3 19 5 ^{o ' "} .9	*861328
14	23 46 36 ^{h m s} .86	2 58 9 ^{o ' "} .5	*2352865	0 19 ^{h m} .9	358 48 52 ^{o ' "} .1	3 17 51 ^{o ' "} .0	*861260
15	23 51 10 ^{h m s} .47	2 27 53 ^{o ' "} .5	*2352242	0 20 ^{h m} .5	0 24 18 ^{o ' "} .5	3 16 27 ^{o ' "} .0	*861196
16	23 55 43 ^{h m s} .76	1 57 33 ^{o ' "} .3	*2351499	0 21 ^{h m} .1	1 59 46 ^{o ' "} .4	3 14 53 ^{o ' "} .8	*861131
17	0 0 16 ^{h m s} .78	1 27 9 ^{o ' "} .5	*2350636	0 21 ^{h m} .7	3 35 15 ^{o ' "} .7	3 13 11 ^{o ' "} .6	*861065
18	0 4 49 ^{h m s} .56	0 56 43 ^{o ' "} .0	*2349654	0 22 ^{h m} .3	5 10 46 ^{o ' "} .5	3 11 20 ^{o ' "} .5	*860997
19	0 9 22 ^{h m s} .16	S. 0 26 14 ^{o ' "} .3	*2348552	0 22 ^{h m} .9	6 46 18 ^{o ' "} .6	3 9 20 ^{o ' "} .5	*860925
20	0 13 54 ^{h m s} .61	N. 0 4 15 ^{o ' "} .7	*2347330	0 23 ^{h m} .5	8 21 52 ^{o ' "} .3	3 7 11 ^{o ' "} .7	*860857
21	0 18 26 ^{h m s} .95	0 34 46 ^{o ' "} .4	*2345989	0 24 ^{h m} .1	9 57 27 ^{o ' "} .4	3 4 54 ^{o ' "} .2	*860785
22	0 22 59 ^{h m s} .23	1 5 16 ^{o ' "} .9	*2344528	0 24 ^{h m} .7	11 33 4 ^{o ' "} .0	3 2 28 ^{o ' "} .1	*860713
23	0 27 31 ^{h m s} .49	1 35 46 ^{o ' "} .7	*2342947	0 25 ^{h m} .3	13 8 42 ^{o ' "} .1	2 59 53 ^{o ' "} .3	*860639
24	0 32 3 ^{h m s} .77	2 6 14 ^{o ' "} .9	*2341246	0 25 ^{h m} .9	14 44 21 ^{o ' "} .7	2 57 10 ^{o ' "} .5	*860564
25	0 36 36 ^{h m s} .12	2 36 40 ^{o ' "} .9	*2339423	0 26 ^{h m} .5	16 20 2 ^{o ' "} .8	2 54 19 ^{o ' "} .2	*860488
26	0 41 8 ^{h m s} .59	3 7 3 ^{o ' "} .9	*2337484	0 27 ^{h m} .1	17 55 45 ^{o ' "} .4	2 51 19 ^{o ' "} .8	*860412
27	0 45 41 ^{h m s} .22	3 37 23 ^{o ' "} .2	*2335420	0 27 ^{h m} .7	19 31 29 ^{o ' "} .5	2 48 12 ^{o ' "} .3	*860334
28	0 50 14 ^{h m s} .05	4 7 38 ^{o ' "} .2	*2333234	0 28 ^{h m} .3	21 7 15 ^{o ' "} .2	2 44 57 ^{o ' "} .0	*860258
29	0 54 47 ^{h m s} .12	4 37 48 ^{o ' "} .1	*2330923	0 28 ^{h m} .9	22 43 2 ^{o ' "} .4	2 41 33 ^{o ' "} .9	*860176
30	0 59 20 ^{h m s} .48	5 7 52 ^{o ' "} .2	*2328488	0 29 ^{h m} .5	24 18 51 ^{o ' "} .2	2 38 3 ^{o ' "} .2	*860097
31	1 3 54 ^{h m s} .17	5 37 49 ^{o ' "} .7	*2325927	0 30 ^{h m} .1	25 54 41 ^{o ' "} .6	2 34 25 ^{o ' "} .1	*860016
32	1 8 28 ^{h m s} .22	N. 6 7 40 ^{o ' "} .0	0 [.] 2323238	0 30 ^{h m} .7	27 30 33 ^{o ' "} .5	S. 2 30 39 ^{o ' "} .8	

MARCH, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi-diameter.</i>	<i>Hor. Par.</i>
^h 22 ^m 46 ^s 35 ·91	+ 11 ·74	0 ·32	^o S. 9 ⁱ 19 ⁿ 11 ·9	+ 70 ·2	4 ·8	5 ·0
22 51 17 ·23	11 ·71	0 ·32	8 50 59 ·1	70 ·8	4 ·8	5 ·0
22 55 57 ·75	11 ·67	0 ·32	8 22 32 ·3	71 ·4	4 ·8	5 ·0
23 0 37 ·49	11 ·64	0 ·32	7 53 52 ·2	71 ·9	4 ·8	5 ·0
23 5 16 ·50	11 ·61	0 ·32	7 24 59 ·5	72 ·4	4 ·8	5 ·0
23 9 54 ·81	11 ·58	0 ·32	6 55 54 ·9	72 ·9	4 ·8	5 ·0
23 14 32 ·46	11 ·56	0 ·32	6 26 39 ·3	73 ·4	4 ·8	5 ·0
23 19 9 ·48	11 ·53	0 ·32	5 57 13 ·5	73 ·8	4 ·8	5 ·0
23 23 45 ·92	11 ·51	0 ·32	5 27 38 ·1	74 ·2	4 ·8	5 ·0
23 28 21 ·80	11 ·49	0 ·32	4 57 53 ·9	74 ·5	4 ·8	5 ·0
23 32 57 ·18	11 ·46	0 ·32	4 28 1 ·7	74 ·8	4 ·8	5 ·0
23 37 32 ·08	11 ·43	0 ·32	3 58 2 ·2	75 ·1	4 ·8	5 ·0
23 42 6 ·56	11 ·41	0 ·32	3 27 56 ·2	75 ·4	4 ·8	5 ·0
23 46 40 ·63	11 ·40	0 ·32	2 57 44 ·4	75 ·6	4 ·8	5 ·0
23 51 14 ·36	11 ·40	0 ·32	2 27 27 ·6	75 ·8	4 ·8	5 ·0
23 55 47 ·76	11 ·39	0 ·32	1 57 6 ·6	75 ·9	4 ·8	5 ·0
0 0 20 ·89	11 ·38	0 ·32	1 26 42 ·0	76 ·1	4 ·8	5 ·0
0 4 53 ·78	11 ·37	0 ·32	0 56 14 ·7	76 ·2	4 ·8	5 ·0
0 9 26 ·49	11 ·36	0 ·32	S. 0 25 45 ·2	76 ·3	4 ·8	5 ·0
0 13 59 ·05	11 ·35	0 ·32	N. 0 4 45 ·6	76 ·3	4 ·8	5 ·0
0 18 31 ·50	11 ·35	0 ·32	0 35 17 ·1	76 ·3	4 ·8	5 ·0
0 23 3 ·89	11 ·35	0 ·32	1 5 48 ·3	76 ·3	4 ·8	5 ·0
0 27 36 ·26	11 ·35	0 ·32	1 36 18 ·8	76 ·2	4 ·8	5 ·0
0 32 8 ·66	11 ·35	0 ·32	2 6 47 ·7	76 ·1	4 ·8	5 ·0
0 36 41 ·13	11 ·36	0 ·32	2 37 14 ·4	76 ·1	4 ·8	5 ·0
0 41 13 ·71	11 ·36	0 ·32	3 7 38 ·1	76 ·0	4 ·8	5 ·0
0 45 46 ·46	11 ·37	0 ·32	3 37 58 ·1	75 ·9	4 ·8	5 ·0
0 50 19 ·41	11 ·38	0 ·32	4 8 13 ·8	75 ·6	4 ·8	5 ·0
0 54 52 ·60	11 ·39	0 ·32	4 38 24 ·4	75 ·3	4 ·8	5 ·0
0 59 26 ·08	11 ·40	0 ·32	5 8 29 ·2	75 ·1	4 ·8	5 ·0
1 3 59 ·90	11 ·41	0 ·32	5 38 27 ·3	74 ·8	4 ·8	5 ·0
1 8 34 ·08	+ 11 ·42	0 ·32	N. 6 8 18 ·2	+ 74 ·5	4 ·8	5 ·0

APRIL, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	No.
1	1 8 28 ^{h m s} .22	N. 6 7 40 ^{o ' "} .0	.2323238	0 30 ^{h m} .7	27 30 33 ^{o ' "} .5	S. 2 30 39 ^{o ' "} .8	.8595
2	1 13 2 ^{h m s} .69	6 37 22 ^{o ' "} .3	.2320428	0 31 ^{h m} .4	29 6 27 ^{o ' "} .0	2 26 47 ^{o ' "} .3	.8594
3	1 17 37 ^{h m s} .61	7 6 55 ^{o ' "} .9	.2317475	0 32 ^{h m} .1	30 42 22 ^{o ' "} .2	2 22 47 ^{o ' "} .8	.8593
4	1 22 13 ^{h m s} .03	7 36 20 ^{o ' "} .0	.2314897	0 32 ^{h m} .7	32 18 19 ^{o ' "} .0	2 18 41 ^{o ' "} .7	.8592
5	1 26 48 ^{h m s} .99	8 5 33 ^{o ' "} .9	.2311186	0 33 ^{h m} .3	33 54 17 ^{o ' "} .4	2 14 28 ^{o ' "} .9	.8591
6	1 31 25 ^{h m s} .52	8 34 36 ^{o ' "} .9	.2307840	0 34 ^{h m} .0	35 30 17 ^{o ' "} .5	2 10 9 ^{o ' "} .7	.8590
7	1 36 2 ^{h m s} .66	9 3 28 ^{o ' "} .2	.2304356	0 34 ^{h m} .7	37 6 19 ^{o ' "} .2	2 5 44 ^{o ' "} .4	.8589
8	1 40 40 ^{h m s} .45	9 32 7 ^{o ' "} .0	.2300735	0 35 ^{h m} .4	38 42 22 ^{o ' "} .6	2 1 13 ^{o ' "} .1	.8588
9	1 45 18 ^{h m s} .91	10 0 32 ^{o ' "} .6	.2296974	0 36 ^{h m} .1	40 18 27 ^{o ' "} .7	1 56 36 ^{o ' "} .0	.8587
10	1 49 58 ^{h m s} .08	10 28 44 ^{o ' "} .3	.2293071	0 36 ^{h m} .8	41 54 34 ^{o ' "} .5	1 51 53 ^{o ' "} .3	.8586
11	1 54 38 ^{h m s} .00	10 56 41 ^{o ' "} .2	.2289027	0 37 ^{h m} .5	43 30 42 ^{o ' "} .9	1 47 5 ^{o ' "} .3	.8585
12	1 59 18 ^{h m s} .68	11 24 22 ^{o ' "} .6	.2284840	0 38 ^{h m} .2	45 6 53 ^{o ' "} .1	1 42 12 ^{o ' "} .2	.8584
13	2 4 0 ^{h m s} .17	11 51 47 ^{o ' "} .8	.2280510	0 39 ^{h m} .0	46 43 4 ^{o ' "} .9	1 37 14 ^{o ' "} .1	.8583
14	2 8 42 ^{h m s} .48	12 18 56 ^{o ' "} .0	.2276036	0 39 ^{h m} .7	48 19 18 ^{o ' "} .4	1 32 11 ^{o ' "} .4	.8582
15	2 13 25 ^{h m s} .66	12 45 46 ^{o ' "} .4	.2271418	0 40 ^{h m} .5	49 55 33 ^{o ' "} .6	1 27 4 ^{o ' "} .2	.8581
16	2 18 9 ^{h m s} .71	13 12 18 ^{o ' "} .3	.2266655	0 41 ^{h m} .3	51 31 50 ^{o ' "} .6	1 21 52 ^{o ' "} .8	.8580
17	2 22 54 ^{h m s} .68	13 38 30 ^{o ' "} .9	.2261746	0 42 ^{h m} .1	53 8 9 ^{o ' "} .3	1 16 37 ^{o ' "} .4	.8579
18	2 27 40 ^{h m s} .58	14 4 23 ^{o ' "} .5	.2256690	0 42 ^{h m} .9	54 44 29 ^{o ' "} .8	1 11 18 ^{o ' "} .3	.8578
19	2 32 27 ^{h m s} .45	14 29 55 ^{o ' "} .4	.2251489	0 43 ^{h m} .7	56 20 52 ^{o ' "} .1	1 5 55 ^{o ' "} .8	.8577
20	2 37 15 ^{h m s} .29	14 55 5 ^{o ' "} .8	.2246140	0 44 ^{h m} .6	57 57 16 ^{o ' "} .1	1 0 30 ^{o ' "} .0	.8576
21	2 42 4 ^{h m s} .14	15 19 53 ^{o ' "} .9	.2240645	0 45 ^{h m} .5	59 33 41 ^{o ' "} .9	0 55 1 ^{o ' "} .2	.8575
22	2 46 54 ^{h m s} .01	15 44 19 ^{o ' "} .0	.2235003	0 46 ^{h m} .4	61 10 9 ^{o ' "} .5	0 49 29 ^{o ' "} .7	.8574
23	2 51 44 ^{h m s} .92	16 8 20 ^{o ' "} .4	.2229214	0 47 ^{h m} .3	62 46 39 ^{o ' "} .0	0 43 55 ^{o ' "} .7	.8573
24	2 56 36 ^{h m s} .89	16 31 57 ^{o ' "} .3	.2223277	0 48 ^{h m} .2	64 23 10 ^{o ' "} .3	0 38 19 ^{o ' "} .6	.8572
25	3 1 29 ^{h m s} .93	16 55 9 ^{o ' "} .1	.2217191	0 49 ^{h m} .2	65 59 43 ^{o ' "} .3	0 32 41 ^{o ' "} .5	.8571
26	3 6 24 ^{h m s} .06	17 17 55 ^{o ' "} .0	.2210955	0 50 ^{h m} .1	67 36 18 ^{o ' "} .2	0 27 1 ^{o ' "} .7	.8570
27	3 11 19 ^{h m s} .29	17 40 14 ^{o ' "} .2	.2204569	0 51 ^{h m} .0	69 12 54 ^{o ' "} .9	0 21 20 ^{o ' "} .6	.8569
28	3 16 15 ^{h m s} .63	18 2 6 ^{o ' "} .1	.2198031	0 52 ^{h m} .0	70 49 33 ^{o ' "} .5	0 15 38 ^{o ' "} .3	.8568
29	3 21 13 ^{h m s} .09	18 23 29 ^{o ' "} .9	.2191341	0 53 ^{h m} .1	72 26 13 ^{o ' "} .8	0 9 55 ^{o ' "} .2	.8567
30	3 26 11 ^{h m s} .67	18 44 24 ^{o ' "} .9	.2184498	0 54 ^{h m} .1	74 2 55 ^{o ' "} .9	S.0 4 11 ^{o ' "} .5	.8566
31	3 31 11 ^{h m s} .38	N.19 4 50 ^{o ' "} .3	.2177499	0 55 ^{h m} .2	75 39 39 ^{o ' "} .9	N.0 1 32 ^{o ' "} .5	.8565

APRIL, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi- diameter.</i>	<i>Hor. Par.</i>
h m s	+ °	s	N. ° ′ ″	+ ″	″	″
1 8 34.08	+ 11.43	0.32	N. 6 8 18.8	+ 74.5	4.8	5.0
1 13 8.68	11.45	0.32	6 38 1.1	74.1	4.8	5.0
1 17 43.73	11.47	0.32	7 7 35.3	73.7	4.8	5.0
1 22 19.28	11.49	0.32	7 36 59.9	73.3	4.8	5.0
1 26 53.38	11.52	0.32	8 6 14.3	72.9	4.8	5.0
1 31 32.06	11.54	0.32	8 35 17.9	72.4	4.8	5.0
1 36 9.34	11.57	0.32	9 4 9.8	71.9	4.8	5.0
1 40 47.28	11.59	0.32	9 32 49.1	71.4	4.8	5.0
1 45 25.89	11.62	0.33	10 1 15.2	70.8	4.9	5.1
1 50 5.22	11.65	0.33	10 29 27.3	70.2	4.9	5.1
1 54 45.30	11.69	0.34	10 57 24.7	69.6	4.9	5.1
1 59 26.14	11.72	0.34	11 25 6.5	68.9	4.9	5.1
2 4 7.80	11.75	0.34	11 52 32.1	68.2	4.9	5.1
2 8 50.29	11.79	0.34	12 19 40.7	67.5	4.9	5.1
2 13 33.65	11.82	0.34	12 46 31.5	66.7	4.9	5.1
2 18 17.88	11.86	0.34	13 13 8.7	65.9	4.9	5.1
2 23 3.03	11.90	0.34	13 39 16.6	65.1	4.9	5.1
2 27 49.13	11.94	0.34	14 5 9.5	64.2	4.9	5.1
2 32 36.20	11.98	0.34	14 30 41.6	63.4	4.9	5.1
2 37 24.24	12.02	0.34	14 55 52.2	62.4	4.9	5.1
2 42 13.29	12.07	0.34	15 20 40.5	61.5	4.9	5.1
2 47 3.38	12.11	0.34	15 45 5.7	60.5	4.9	5.1
2 51 54.50	12.15	0.34	16 9 7.2	59.6	4.9	5.1
2 56 46.69	12.20	0.34	16 32 44.2	58.5	4.9	5.1
3 1 39.95	12.24	0.34	16 55 56.1	57.5	4.9	5.1
3 6 34.32	12.29	0.35	17 18 42.0	56.4	5.0	5.2
3 11 29.79	12.33	0.35	17 41 1.2	55.2	5.0	5.2
3 16 26.38	12.38	0.35	18 2 53.0	54.1	5.0	5.2
3 21 24.09	12.43	0.35	18 24 16.7	52.9	5.0	5.2
3 26 22.93	12.47	0.35	18 45 11.5	51.7	5.0	5.2
3 31 22.90	+ 12.52	0.35	N. 19 5 36.7	+ 50.4	5.0	5.2

MAY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Lo Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	
1	3 31 11.38	N.19 4 50.3	0.2177499	0 55.2	75 39 39.9	N.0 1 32.5	9.857
2	3 36 12.21	19 24 45.6	.2170344	0 56.3	77 16 25.6	0 7 16.5	.857
3	3 41 14.17	19 44 9.9	.2163031	0 57.4	78 53 13.2	0 13 0.3	.857
4	3 46 17.24	20 3 2.6	.2155558	0 58.5	80 30 2.5	0 18 43.6	.857
5	3 51 21.42	20 21 23.1	.2147922	0 59.6	82 6 53.7	0 24 26.0	.857
6	3 56 26.69	20 39 10.5	.2140123	1 0.7	83 43 46.7	0 30 7.4	.857
7	4 1 33.04	20 56 24.3	.2132159	1 1.9	85 20 41.4	0 35 47.5	.857
8	4 6 40.46	21 13 3.8	.2124027	1 3.1	86 57 37.9	0 41 26.0	.857
9	4 11 48.92	21 29 8.3	.2115728	1 4.3	88 34 36.2	0 47 2.5	.857
10	4 16 58.39	21 44 37.3	.2107259	1 5.5	90 11 36.2	0 52 36.9	.857
11	4 22 8.84	21 59 30.1	.2098619	1 6.8	91 48 38.0	0 58 8.9	.856
12	4 27 20.26	22 13 46.2	.2089808	1 8.0	93 25 41.4	1 3 38.2	.856
13	4 32 32.60	22 27 25.0	.2080825	1 9.3	95 2 46.5	1 9 4.5	.856
14	4 37 45.82	22 40 25.9	.2071669	1 10.6	96 39 53.2	1 14 27.6	.856
15	4 42 59.91	22 52 48.4	.2062339	1 11.9	98 17 1.5	1 19 47.2	.856
16	4 48 14.81	23 4 32.0	.2052835	1 13.2	99 54 11.4	1 25 2.8	.856
17	4 53 30.48	23 15 36.2	.2043156	1 14.5	101 31 22.8	1 30 14.3	.856
18	4 58 46.88	23 26 0.7	.2033303	1 15.8	103 8 35.7	1 35 21.8	.856
19	5 4 3.95	23 35 44.9	.2023275	1 17.2	104 45 50.1	1 40 24.7	.856
20	5 9 21.66	23 44 48.6	.2013072	1 18.5	106 23 5.9	1 45 23.0	.856
21	5 14 39.95	23 53 11.3	.2002693	1 19.8	108 0 23.0	1 50 16.4	.856
22	5 19 58.77	24 0 52.7	.1992140	1 21.2	109 37 41.6	1 55 4.6	.856
23	5 25 18.08	24 7 52.4	.1981411	1 22.6	111 15 1.4	1 59 47.4	.856
24	5 30 37.83	24 14 10.0	.1970507	1 24.0	112 52 22.5	2 4 24.2	.856
25	5 35 57.95	24 19 45.4	.1959427	1 25.4	114 29 44.8	2 8 54.9	.856
26	5 41 18.39	24 24 38.3	.1948170	1 26.8	116 7 8.2	2 13 19.6	.856
27	5 46 39.10	24 28 48.5	.1936735	1 28.2	117 44 32.8	2 17 37.8	.856
28	5 52 0.01	24 32 15.8	.1925122	1 29.6	119 21 58.3	2 21 49.4	.856
29	5 57 21.07	24 35 0.1	.1913330	1 31.0	120 59 24.9	2 25 54.2	.856
30	6 2 42.22	24 37 1.2	.1901357	1 32.4	122 36 52.3	2 29 52.0	.856
31	6 8 3.39	24 38 19.1	.1889201	1 33.9	124 14 20.6	2 33 42.6	.856
32	6 13 24.54	N.24 38 53.7	0.1876861	1 35.3	125 51 49.7	N.2 37	

MAY, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi- diameter.</i>	<i>Hor. Par.</i>
<i>h m s</i>	<i>"</i>	<i>"</i>	<i>° ' "</i>	<i>"</i>	<i>"</i>	<i>"</i>
3 31 22·90	+12·52	0·35	N.19 5 36·7	+50·4	5·0	5·2
3 36 24·00	12·57	0·35	19 25 31·7	49·1	5·0	5·2
3 41 26·23	12·62	0·35	19 44 55·6	47·8	5·0	5·2
3 46 29·58	12·66	0·35	20 3 47·9	46·5	5·0	5·2
3 51 34·04	12·71	0·35	20 22 7·9	45·1	5·0	5·2
3 56 39·60	12·75	0·35	20 39 54·8	43·7	5·0	5·2
4 1 46·24	12·80	0·35	20 57 8·0	42·3	5·0	5·2
4 6 53·96	12·84	0·36	21 13 46·9	40·9	5·1	5·3
4 12 2·72	12·89	0·36	21 29 50·6	39·4	5·1	5·3
4 17 12·50	12·93	0·36	21 45 18·7	37·9	5·1	5·3
4 22 23·26	12·97	0·36	22 0 10·6	36·4	5·1	5·3
4 27 34·99	13·01	0·36	22 14 25·7	34·9	5·1	5·3
4 32 47·65	13·05	0·36	22 28 3·4	33·5	5·1	5·3
4 38 1·19	13·09	0·36	22 41 3·1	31·7	5·1	5·3
4 43 15·60	13·12	0·37	22 53 24·4	30·1	5·1	5·3
4 48 30·83	13·15	0·37	23 5 6·6	28·5	5·1	5·3
4 53 46·82	13·18	0·38	23 16 9·4	26·8	5·2	5·4
4 59 3·55	13·21	0·38	23 26 32·4	25·1	5·2	5·4
5 4 20·95	13·24	0·38	23 36 15·0	23·4	5·2	5·4
5 9 39·00	13·27	0·38	23 45 17·0	21·7	5·2	5·4
5 14 57·62	13·29	0·38	23 53 37·9	20·0	5·2	5·4
5 20 16·78	13·31	0·38	24 1 17·4	18·3	5·2	5·4
5 25 36·42	13·33	0·38	24 8 15·2	16·5	5·2	5·4
5 30 56·50	13·35	0·38	24 14 30·7	14·8	5·2	5·4
5 36 16·95	13·36	0·39	24 20 4·0	13·0	5·3	5·5
5 41 37·72	13·37	0·39	24 24 54·6	11·2	5·3	5·5
5 46 58·75	13·38	0·39	24 29 2·5	9·4	5·3	5·5
5 52 19·98	13·39	0·39	24 32 27·3	7·6	5·3	5·5
5 57 41·36	13·39	0·39	24 35 9·1	5·8	5·3	5·5
6 3 2·83	13·39	0·39	24 37 7·5	4·0	5·3	5·5
6 8 24·32	13·39	0·40	24 38 22·7	2·2	5·4	5·6
6 13	13·39	0·40	N.24 38 54·4	+ 0·4	5·4	5·6

JUNE, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	^h ^m ^s	^o ['] ["]		^h ^m	^o ['] ["]	^o ['] ["]	
1	6 13 24.54	N.24 38 53.7	0.1876861	1 35.3	125 51 49.7	N.2 37 25.8	9.85631
2	6 18 45.60	24 38 45.0	.1864336	1 36.7	127 29 19.5	2 41 1.4	.85631
3	6 24 6.49	24 37 52.9	.1851625	1 38.1	129 6 49.9	2 44 29.3	.85631
4	6 29 27.16	24 36 17.6	.1838726	1 39.5	130 44 20.9	2 47 49.2	.85631
5	6 34 47.55	24 33 59.0	.1825638	1 40.9	132 21 52.3	2 51 1.1	.85631
6	6 40 7.58	24 30 57.4	.1812359	1 42.3	133 59 24.2	2 54 4.7	.85636
7	6 45 27.20	24 27 12.7	.1798888	1 43.7	135 36 56.4	2 56 59.9	.85636
8	6 50 46.35	24 22 45.3	.1785223	1 45.0	137 14 28.9	2 59 46.6	.85637
9	6 56 4.96	24 17 35.3	.1771362	1 46.4	138 52 1.5	3 2 24.6	.85637
10	7 1 22.97	24 11 42.9	.1757304	1 47.8	140 29 34.2	3 4 53.8	.85641
11	7 6 40.33	24 5 8.5	.1743049	1 49.2	142 7 7.0	3 7 14.0	.85641
12	7 11 56.96	23 57 52.3	.1728595	1 50.5	143 44 39.6	3 9 25.3	.85641
13	7 17 12.82	23 49 54.7	.1713942	1 51.8	145 22 12.1	3 11 27.3	.85646
14	7 22 27.86	23 41 16.0	.1699091	1 53.1	146 59 44.3	3 13 20.2	.85646
15	7 27 42.01	23 31 56.6	.1684040	1 54.4	148 37 16.2	3 15 3.7	.85651
16	7 32 55.23	23 21 56.9	.1668789	1 55.7	150 14 47.7	3 16 37.8	.85654
17	7 38 7.47	23 11 17.3	.1653339	1 57.0	151 52 18.7	3 18 2.4	.85657
18	7 43 18.68	22 59 58.3	.1637689	1 58.2	153 29 49.1	3 19 17.5	.85666
19	7 48 28.82	22 48 0.4	.1621840	1 59.4	155 7 18.8	3 20 22.9	.85661
20	7 53 37.85	22 35 24.1	.1605791	2 0.6	156 44 47.7	3 21 18.7	.85661
21	7 58 45.75	22 22 9.9	.1589543	2 1.8	158 22 15.8	3 22 4.8	.85672
22	8 3 52.47	22 8 18.3	.1573095	2 3.0	159 59 42.8	3 22 41.2	.85676
23	8 8 57.98	21 53 49.9	.1556448	2 4.1	161 37 8.9	3 23 7.9	.85685
24	8 14 2.26	21 38 45.2	.1539601	2 5.2	163 14 33.8	3 23 24.7	.85685
25	8 19 5.27	21 23 4.8	.1522554	2 6.3	164 51 57.5	3 23 31.8	.85689
26	8 24 7.00	21 6 49.3	.1505306	2 7.4	166 29 19.8	3 23 29.1	.85694
27	8 29 7.43	20 49 59.2	.1487856	2 8.5	168 6 40.8	3 23 16.6	.85699
28	8 34 6.54	20 32 35.3	.1470202	2 9.5	169 44 0.2	3 22 54.4	.85705
29	8 39 4.33	20 14 38.1	.1452344	2 10.5	171 21 18.2	3 22 22.5	.85710
30	8 44 0.78	19 56 8.2	.1434280	2 11.5	172 58 34.5	3 21 40.9	.85716
31	8 48 55.87	N.19 37 6.4	0.1416009	2 12.5	174 35 49.1	N.3 20 49.6	9.85722

JUNE, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi- diameter.</i>	<i>Hor. Par.</i>
^h 6 ^m 13 ^s 45·78	+ ^s 13·39	^s 0·40	N. 24° 38' 54"·4	+ 0"·4	5"·4	5"·6
6 19 7·15	13·39	0·40	24 38 42·9	- 1"·4	5"·4	5"·6
6 24 28·34	13·38	0·40	24 37 47·8	3"·2	5"·4	5"·6
6 29 49·31	13·37	0·40	24 36 9·4	5"·0	5"·4	5"·6
6 35 9·99	13·35	0·40	24 33 47·6	6"·8	5"·4	5"·6
6 40 30·30	13·34	0·41	24 30 42·8	8"·6	5"·5	5"·7
6 45 50·19	13·32	0·41	24 26 54·9	10"·4	5"·5	5"·7
6 51 9·61	13·30	0·41	24 22 24·1	12"·2	5"·5	5"·7
6 56 28·48	13·27	0·41	24 17 10·7	13"·9	5"·5	5"·7
7 1 46·74	13·25	0·41	24 11 14·8	15"·7	5"·5	5"·7
7 7 4·35	13·22	0·41	24 4 36·9	17"·5	5"·5	5"·7
7 12 21·22	13·19	0·41	23 57 17·1	19"·2	5"·6	5"·8
7 17 37·31	13·15	0·41	23 49 15·9	20"·9	5"·6	5"·8
7 22 52·56	13·12	0·41	23 40 33·5	22"·6	5"·6	5"·8
7 28 6·92	13·08	0·41	23 31 10·4	24"·3	5"·6	5"·8
7 33 20·35	13·04	0·41	23 21 7·0	26"·0	5"·6	5"·8
7 38 32·78	13·00	0·42	23 10 23·6	27"·6	5"·7	5"·9
7 43 44·16	12·96	0·42	22 59 0·8	29"·3	5"·7	5"·9
7 48 54·47	12·91	0·42	22 46 59·1	30"·9	5"·7	5"·9
7 54 3·67	12·86	0·42	22 34 19·0	32"·5	5"·7	5"·9
7 59 11·73	12·81	0·42	22 21 1·0	34"·0	5"·8	6"·0
8 4 18·59	12·76	0·42	22 7 5·6	35"·6	5"·8	6"·0
8 9 24·24	12·71	0·42	21 52 33·4	37"·1	5"·8	6"·0
8 14 28·66	12·66	0·42	21 37 24·8	38"·6	5"·8	6"·0
8 19 31·79	12·60	0·42	21 21 40·6	40"·9	5"·8	6"·0
8 24 33·63	12·55	0·42	21 5 21·3	41"·5	5"·9	6"·1
8 29 34·16	12·49	0·42	20 48 27·4	42"·9	5"·9	6"·1
8 34 33·37	12·44	0·42	20 30 59·8	44"·3	5"·9	6"·1
8 39 31·25	12·38	0·42	20 12 58·9	45"·7	5"·9	6"·1
8 44 27·78	12·33	0·42	19 54 25·3	47"·1	6"·0	6"·2
8 49 22·95	+ 12·27	0·43	N. 19 35 19·8	- 48"·4	6"·0	6"·2

JULY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad. W.
	Noon.	Noon.	Noon.		Noon.	Noon.	No.
	<i>h m s</i>	<i>o i n</i>		<i>h m</i>	<i>o i n</i>	<i>o i n</i>	
1	8 48 55.87	N. 19 37 6.4	0.1416009	2 12.5	174 35 49.1	N. 3 20 49.6	9.8572
2	8 53 49.59	19 17 33.2	.1397529	2 13.5	176 13 2.0	3 19 48.7	.8573
3	8 58 41.94	18 57 29.4	.1378839	2 14.4	177 50 13.0	3 18 38.3	.8574
4	9 3 32.92	18 36 55.7	.1359938	2 15.3	179 27 22.2	3 17 18.4	.8575
5	9 8 22.52	18 15 52.6	.1340822	2 16.2	181 4 29.3	3 15 49.0	.8576
6	9 13 10.73	17 54 21.0	.1321491	2 17.0	182 41 34.4	3 14 10.4	.8577
7	9 17 57.57	17 32 21.4	.1301942	2 17.8	184 18 37.4	3 12 22.5	.8578
8	9 22 43.03	17 9 54.6	.1282173	2 18.6	185 55 38.2	3 10 25.5	.8579
9	9 27 27.12	16 47 1.4	.1262184	2 19.4	187 32 36.7	3 8 19.5	.8579
10	9 32 9.84	16 23 42.7	.1241973	2 20.2	189 9 33.0	3 6 4.5	.8579
11	9 36 51.20	15 59 59.3	.1221538	2 21.0	190 46 26.9	3 3 40.7	.8579
12	9 41 31.21	15 35 51.7	.1200879	2 21.7	192 23 18.4	3 1 8.3	.8579
13	9 46 9.87	15 11 20.7	.1179996	2 22.4	194 0 7.4	2 58 27.3	.8580
14	9 50 47.20	14 46 27.0	.1158887	2 23.1	195 36 53.9	2 55 37.8	.8581
15	9 55 23.22	14 21 11.1	.1137552	2 23.8	197 13 37.9	2 52 40.1	.8581
16	9 59 57.93	13 55 34.0	.1115992	2 24.4	198 50 19.3	2 49 34.4	.8582
17	10 4 31.37	13 29 36.2	.1094205	2 25.0	200 26 58.1	2 46 20.6	.8583
18	10 9 3.54	13 3 18.7	.1072191	2 25.6	202 3 34.2	2 42 59.0	.8584
19	10 13 34.47	12 36 42.2	.1049950	2 26.2	203 40 7.6	2 39 29.8	.8585
20	10 18 4.18	12 9 47.3	.1027482	2 26.7	205 16 38.4	2 35 53.1	.8585
21	10 22 32.70	11 42 34.7	.1004785	2 27.2	206 53 6.4	2 32 9.2	.8586
22	10 27 0.05	11 15 5.2	.0981861	2 27.7	208 29 31.6	2 28 18.2	.8587
23	10 31 26.26	10 47 19.4	.0958708	2 28.2	210 5 54.2	2 24 20.2	.8588
24	10 35 51.37	10 19 18.0	.0935325	2 28.7	211 42 13.9	2 20 15.6	.8589
25	10 40 15.40	9 51 1.7	.0911712	2 29.2	213 18 30.9	2 16 4.4	.8590
26	10 44 38.39	9 22 31.2	.0887868	2 29.6	214 54 45.2	2 11 47.0	.8591
27	10 49 0.37	8 53 47.1	.0863792	2 30.0	216 30 56.7	2 7 23.5	.8591
28	10 53 21.36	8 24 50.1	.0839481	2 30.4	218 7 5.5	2 2 54.0	.8592
29	10 57 41.41	7 55 40.9	.0814934	2 30.8	219 43 11.5	1 58 19.0	.8592
30	11 2 0.55	7 26 20.2	.0790149	2 31.2	221 19 14.7	1 53 38.5	.8593
31	11 6 18.81	6 56 48.6	.0765123	2 31.6	222 55 15.3	1 48 52.8	.8594
32	11 10 36.23	N. 6 27 6.8	0.0739854	2 32.0	224 31 13.1	N. 1 44 2.1	9.8594

JULY, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi-diameter.</i>	<i>Hor. Par.</i>
^h 8 ^m 49 ^s 22·95	+12·27	0·42	N. 19° 35' 19·8	-48·4	6·0	6·2
8 54 16·75	12·22	0·42	19 15 42·9	49·7	6·0	6·2
8 59 9·16	12·16	0·42	18 55 35·5	51·0	6·0	6·2
9 4 0·19	12·10	0·43	18 34 58·3	52·2	6·1	6·3
9 8 49·84	12·04	0·43	18 13 51·7	53·4	6·1	6·3
9 13 38·09	11·98	0·43	17 52 16·6	54·5	6·1	6·3
9 18 24·96	11·92	0·43	17 30 13·6	55·7	6·2	6·4
9 23 10·45	11·87	0·43	17 7 43·5	56·8	6·2	6·4
9 27 54·56	11·81	0·43	16 44 47·1	57·9	6·2	6·4
9 32 37·30	11·75	0·43	16 21 25·2	58·9	6·2	6·4
9 37 18·67	11·70	0·43	15 57 38·7	59·9	6·3	6·5
9 41 58·69	11·64	0·43	15 33 28·0	60·9	6·3	6·5
9 46 37·26	11·58	0·43	15 8 54·0	61·9	6·3	6·5
9 51 14·69	11·53	0·43	14 43 57·4	62·8	6·3	6·6
9 55 50·70	11·47	0·43	14 18 38·6	63·7	6·3	6·6
10 0 25·40	11·42	0·43	13 52 58·7	64·6	6·3	6·6
10 4 58·83	11·37	0·43	13 26 58·2	65·4	6·4	6·7
10 9 30·99	11·31	0·43	13 0 38·1	66·2	6·4	6·7
10 14 1·90	11·26	0·43	12 33 59·1	67·0	6·4	6·7
10 18 31·59	11·21	0·44	12 7 1·8	67·8	6·5	6·8
10 23 0·09	11·16	0·44	11 39 46·9	68·5	6·5	6·8
10 27 27·41	11·11	0·44	11 12 15·1	69·2	6·5	6·8
10 31 53·60	11·07	0·45	10 44 27·1	69·9	6·6	6·9
10 36 18·69	11·02	0·45	10 16 23·6	70·5	6·6	6·9
10 40 42·70	10·98	0·46	9 48 5·2	71·1	6·7	7·0
10 45 5·66	10·93	0·46	9 19 32·7	71·6	6·7	7·0
10 49 27·61	10·89	0·46	8 50 46·7	72·2	6·7	7·0
10 53 48·58	10·85	0·46	8 21 47·9	72·7	6·8	7·1
10 58 8·60	10·82	0·46	7 52 37·0	73·2	6·8	7·1
11 2 27·71	10·78	0·46	7 23 14·7	73·7	6·9	7·2
11 6 45·94	10·74	0·46	6 53 41·6	74·1	6·9	7·2
11 11 3·34	+10·71	0·46	N. 6 23 58·4	-74·5	6·9	7·2

AUGUST, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ' "		h m	° ' "	° ' "	
1	11 10 36.23	N. 6 27 6.8	0.0739854	2 32.0	224 31 13.1	N. 1 44 2.1	9.8593
2	11 14 52.84	5 57 15.5	.0714339	2 32.3	226 7 8.2	1 39 6.7	.8594
3	11 19 8.67	5 27 15.4	.0688576	2 32.6	227 43 0.7	1 34 6.7	.8597
4	11 23 23.76	4 57 7.1	.0662562	2 32.9	229 18 50.5	1 29 2.5	.8598
5	11 27 38.14	4 26 51.3	.0636293	2 33.2	230 54 37.7	1 23 54.2	.8599
6	11 31 51.85	3 56 28.7	.0609768	2 33.5	232 30 22.4	1 18 42.2	.8599
7	11 36 4.91	3 26 0.0	.0582984	2 33.7	234 6 4.5	1 13 26.6	.8600
8	11 40 17.36	2 55 25.8	.0555938	2 34.0	235 41 44.1	1 8 7.8	.8601
9	11 44 29.23	2 24 46.9	.0528627	2 34.3	237 17 21.2	1 2 45.9	.8602
10	11 48 40.55	1 54 3.9	.0501050	2 34.5	238 52 55.9	0 57 21.1	.8603
11	11 52 51.35	1 23 17.5	.0473204	2 34.7	240 28 28.3	0 51 53.9	.8603
12	11 57 1.66	0 52 28.4	.0445087	2 35.0	242 3 58.3	0 46 24.4	.8604
13	12 1 11.51	N. 0 21 37.2	.0416698	2 35.2	243 39 26.1	0 40 52.8	.8605
14	12 5 20.93	S. 0 9 15.4	.0388034	2 35.4	245 14 51.7	0 35 19.5	.8606
15	12 9 29.96	0 40 8.7	.0359094	2 35.6	246 50 15.1	0 29 44.6	.8606
16	12 13 38.63	1 11 2.1	.0329877	2 35.8	248 25 36.4	0 24 8.5	.8607
17	12 17 46.96	1 41 54.9	.0300380	2 36.0	250 0 55.7	0 18 31.4	.8608
18	12 21 54.99	2 12 46.6	.0270604	2 36.2	251 36 13.0	0 12 53.6	.8609
19	12 26 2.76	2 43 36.4	.0240546	2 36.4	253 11 28.4	0 7 15.2	.8609
20	12 30 10.29	3 14 23.8	.0210205	2 36.6	254 46 41.9	N. 0 1 36.6	.8610
21	12 34 17.62	3 45 8.1	.0179580	2 36.8	256 21 53.6	S. 0 4 1.9	.8610
22	12 38 24.77	4 15 48.8	.0148669	2 37.0	257 57 3.6	0 9 40.2	.8611
23	12 42 31.79	4 46 25.1	.0117469	2 37.1	259 32 12.0	0 15 17.9	.8612
24	12 46 38.71	5 16 56.5	.0085979	2 37.3	261 7 18.8	0 20 54.8	.8612
25	12 50 45.55	5 47 22.3	.0054195	2 37.5	262 42 24.1	0 26 30.7	.8613
26	12 54 52.35	6 17 42.0	0.0022114	2 37.7	264 17 27.9	0 32 5.2	.8614
27	12 58 59.15	6 47 55.0	9.9989733	2 37.8	265 52 30.4	0 37 38.2	.8614
28	13 3 5.97	7 18 0.6	.9957047	2 38.0	267 27 31.6	0 43 9.4	.8615
29	13 7 12.84	7 47 58.3	.9924054	2 38.2	269 2 31.6	0 48 38.5	.8615
30	13 11 19.79	8 17 47.4	.9890749	2 38.4	270 37 30.5	0 54 5.3	.8616
31	13 15 26.84	8 47 27.2	.9857127	2 38.5	272 12 28.2	0 59 29.5	.8616
32	13 19 34.02	S. 9 16 57.1	9.9828186	2 38.6	273 47 25.0	S. 1 4 50.9	.8617

AUGUST, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
^h ^m ^s 11 11 5 34	+10 71	0 46	N.6 23 58 4	-74 5	6 9	7 2
11 15 19 32	10 67	0 46	5 54 5 7	74 9	7 0	7 2
11 19 35 73	10 64	0 46	5 24 4 2	75 2	7 0	7 2
11 23 50 30	10 61	0 47	4 53 54 7	75 5	7 1	7 2
11 28 5 16	10 58	0 47	4 53 37 8	75 8	7 1	7 2
11 32 18 88	10 56	0 48	3 53 14 2	76 1	7 2	7 2
11 36 31 89	10 53	0 48	3 22 44 5	76 4	7 2	7 2
11 40 44 82	10 51	0 48	2 52 9 4	76 6	7 2	7 2
11 44 56 18	10 48	0 49	2 21 29 7	76 7	7 2	7 6
11 49 7 48	10 46	0 49	1 50 46 0	76 9	7 2	7 6
11 53 18 27	10 44	0 49	1 19 58 9	77 0	7 4	7 7
11 57 28 57	10 42	0 49	0 49 9 3	77 1	7 4	7 7
12 1 38 41	10 40	0 50	N.6 18 17 6	77 2	7 5	7 2
12 5 47 82	10 38	0 50	E.0 12 32 4	77 2	7 2	7 2
12 9 56 35	10 37	0 51	0 43 29 0	77 2	7 6	7 9
12 14 5 52	10 35	0 52	1 14 22 6	77 2	7 7	8 0
12 18 13 85	10 34	0 52	1 45 15 5	77 2	7 7	8 0
12 22 21 68	10 33	0 52	2 16 7 3	77 1	7 8	8 1
12 26 29 63	10 32	0 52	2 46 57 1	77 0	7 8	8 1
12 30 37 19	10 31	0 53	3 17 44 4	76 9	7 9	8 2
12 34 44 53	10 30	0 53	3 48 28 6	76 8	7 9	8 2
12 38 51 69	10 30	0 53	4 19 9 1	76 6	8 0	8 2
12 42 58 72	10 29	0 53	4 49 45 2	76 4	8 0	8 2
12 47 5 67	10 29	0 54	5 20 16 2	76 2	8 1	8 4
12 51 12 58	10 29	0 55	5 50 41 5	76 0	8 2	8 5
12 55 19 36	10 29	0 55	6 21 0 7	75 7	8 2	8 5
12 59 26 19	10 29	0 56	6 51 13 2	75 4	8 3	8 6
13 3 33 05	10 29	0 57	7 21 18 2	75 0	8 4	8 7
13 7 39 35	10 29	0 57	7 51 15 2	74 7	8 4	8 7
13 11 46 34	10 29	0 58	8 21 3 5	74 2	8 5	8 8
13 15 54 03	10 30	0 58	8 50 42 5	73 9	8 6	8 9
	+10 30	0 58	S.9 20 11 5	-73 5	8 6	8 9

SEPTEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	No.
1	13 19 34.02	S. 9 16 57.1	9.9823186	2 38.6	273 47 25.0	S. 1 4 50.9	9.861
2	13 23 41.36	9 46 16.5	9.9788918	2 38.8	275 22 20.7	1 10 9.3	9.861
3	13 27 48.86	10 15 24.8	9.9754319	2 39.0	276 57 15.6	1 15 24.5	9.861
4	13 31 56.56	10 44 21.3	9.9719383	2 39.2	278 32 9.7	1 20 36.1	9.861
5	13 36 4.47	11 13 5.4	9.9684103	2 39.4	280 7 3.3	1 25 44.0	9.861
6	13 40 12.61	11 41 36.4	9.9648476	2 39.6	281 41 56.3	1 30 47.9	9.861
7	13 44 20.98	12 9 53.6	9.9612496	2 39.8	283 16 48.7	1 35 47.6	9.861
8	13 48 29.60	12 37 56.5	9.9576160	2 40.0	284 51 40.6	1 40 42.9	9.861
9	13 52 38.47	13 5 44.3	9.9539463	2 40.2	286 26 32.0	1 45 33.6	9.861
10	13 56 47.61	13 33 16.4	9.9502399	2 40.4	288 1 23.1	1 50 19.4	9.861
11	14 0 57.01	14 0 32.2	9.9464966	2 40.6	289 36 13.9	1 55 0.1	9.861
12	14 5 6.67	14 27 31.0	9.9427159	2 40.8	291 11 4.4	1 59 35.5	9.861
13	14 9 16.60	14 54 12.2	9.9388973	2 41.0	292 45 54.7	2 4 5.4	9.861
14	14 13 26.80	15 20 35.2	9.9350405	2 41.2	294 20 44.9	2 8 29.7	9.861
15	14 17 37.27	15 46 39.4	9.9311451	2 41.4	295 55 35.0	2 12 48.0	9.861
16	14 21 48.00	16 12 24.1	9.9272107	2 41.7	297 30 25.2	2 17 0.3	9.861
17	14 25 58.99	16 37 48.7	9.9232369	2 41.9	299 5 15.5	2 21 6.2	9.861
18	14 30 10.24	17 2 52.6	9.9192234	2 42.2	300 40 5.9	2 25 5.8	9.861
19	14 34 21.74	17 27 35.4	9.9151696	2 42.4	302 14 56.5	2 28 58.7	9.861
20	14 38 33.48	17 51 56.3	9.9110753	2 42.7	303 49 47.4	2 32 44.8	9.861
21	14 42 45.44	18 15 54.9	9.9069399	2 42.9	305 24 38.7	2 36 23.9	9.861
22	14 46 57.62	18 39 30.6	9.9027629	2 43.2	306 59 36.4	2 39 53.9	9.861
23	14 51 10.00	19 2 42.8	9.8985439	2 43.5	308 34 22.5	2 43 20.7	9.861
24	14 55 22.56	19 25 31.0	9.8942823	2 43.8	310 9 15.2	2 46 37.9	9.861
25	14 59 35.29	19 47 54.6	9.8899775	2 44.1	311 44 8.4	2 49 47.6	9.861
26	15 3 48.16	20 9 53.0	9.8856289	2 44.3	313 19 2.2	2 52 49.5	9.861
27	15 8 1.14	20 31 25.9	9.8812357	2 44.6	314 53 56.6	2 55 43.5	9.861
28	15 12 14.20	20 52 32.5	9.8767972	2 44.9	316 28 51.8	2 58 29.5	9.861
29	15 16 27.31	21 13 12.5	9.8723111	2 45.2	318 3 47.7	3 1 7.4	9.861
30	15 20 40.43	21 33 25.3	9.8677711	2 45.5	319 38 11.1	3 3 37.0	9.861
31	15 24 53.52	S. 21 53 10.4	9.8632311	2 45.8	321 13 5.4	3 5 58.2	9.861

SEPTEMBER, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi- diameter.	Hor. Par.
h m s	s	s	° ' "	"	"	"
13 20 1 26	+10 30	0 58	S. 9 20 11 5	-73 5	8 6	8 9
13 24 8 65	10 31	0 59	9 49 29 9	73 1	8 7	9 0
13 28 16 30	10 32	0 59	10 18 37 1	72 6	8 8	9 1
13 32 23 95	10 33	0 59	10 47 32 5	72 1	8 8	9 1
13 36 31 92	10 34	0 59	11 16 15 4	71 5	8 8	9 2
13 40 40 13	10 35	0 60	11 44 45 1	71 0	8 9	9 3
13 44 48 56	10 36	0 60	12 13 1 0	70 4	8 9	9 3
13 48 57 24	10 37	0 61	12 41 2 6	69 7	9 0	9 4
13 53 6 17	10 38	0 62	13 8 48 9	69 1	9 1	9 5
13 57 15 38	10 39	0 63	13 36 19 4	68 4	9 2	9 6
14 1 24 84	10 40	0 64	14 3 33 6	67 7	9 3	9 7
14 5 34 57	10 41	0 64	14 30 30 7	67 0	9 4	9 8
14 9 44 57	10 42	0 65	14 57 10 1	66 3	9 5	9 9
14 13 54 84	10 43	0 66	15 23 31 2	65 5	9 6	10 0
14 18 5 38	10 44	0 67	15 49 33 3	64 7	9 7	10 1
14 22 16 18	10 46	0 68	16 15 16 3	63 9	9 8	10 2
14 26 27 24	10 47	0 69	16 40 38 8	63 0	9 9	10 3
14 30 38 56	10 48	0 69	17 5 40 6	62 1	9 9	10 3
14 34 50 13	10 49	0 70	17 30 21 2	61 2	10 0	10 4
14 39 1 94	10 50	0 71	17 54 39 9	60 3	10 1	10 5
14 43 13 97	10 51	0 71	18 18 36 2	59 4	10 2	10 6
14 47 26 22	10 52	0 72	18 42 9 5	58 4	10 3	10 7
14 51 38 67	10 52	0 73	19 5 19 3	57 4	10 4	10 8
14 55 51 29	10 53	0 74	19 28 5 0	56 4	10 5	10 9
15 0 4 08	10 54	0 75	19 50 26 0	55 4	10 6	11 0
15 4 17 02	10 54	0 75	20 12 21 8	54 3	10 7	11 1
15 8 30 06	10 55	0 76	20 33 52 0	53 2	10 9	11 3
15 12 43 18	10 55	0 77	20 54 53 8	52 1	11 0	11 4
15 16 56 33	10 55	0 79	21 15 32 9	51 0	11 1	11 5
15 21 9 50	10 55	0 80	21 35 42 8	49 9	11 2	11 6
15 25 22 63	+10 55	0 81	S. 21 55 24 9	-48 7	11 4	11 8

OCTOBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Eq. d. Rad. Va.
	Noon.	Noon.	Noon.		Noon.	Noon.	No.
	<small>h m s</small>	<small>° ' " N</small>		<small>h m</small>	<small>° ' " W</small>	<small>° ' " N</small>	
1	15 24 53.52	8. 21 55 10.4	9.8632023	2 45.7	321 13 41.8	3. 5 58.2	9.86225
2	15 29 6.52	22 12 27.4	8585747	2 46.0	322 48 40.2	3. 8 10.9	9.86225
3	15 33 19.39	22 21 15.7	8538977	2 46.3	324 23 39.4	3 10 16.1	9.86119
4	15 37 32.07	22 49 34.9	8491704	2 46.6	325 58 39.6	3 12 10.3	9.86117
5	15 41 44.48	23 7 24.6	8443920	2 46.8	327 33 40.7	3 12 57.2	9.86114
6	15 45 56.57	23 24 44.4	8395617	2 47.0	329 8 42.8	3 15 35.0	9.86112
7	15 50 8.25	23 41 33.8	8346786	2 47.2	330 43 45.9	3 17 3.9	9.86099
8	15 54 19.45	23 57 52.5	8297412	2 47.6	332 18 50.1	3 18 23.7	9.86097
9	15 58 30.07	24 13 40.0	8247507	2 47.8	333 53 55.4	3 19 24.3	9.86094
10	16 2 40.03	24 28 56.1	8197045	2 48.0	335 29 1.8	3 20 36.2	9.86199
11	16 6 49.24	24 43 40.4	8146022	2 48.2	337 4 9.4	3 21 22.7	9.86195
12	16 10 57.60	24 57 52.5	8094437	2 48.4	338 39 18.0	3 22 12.0	9.86191
13	16 15 4.99	25 11 32.4	8042280	2 48.6	340 14 27.9	3 22 46.0	9.86187
14	16 19 11.32	25 24 59.6	7989547	2 48.7	341 49 39.0	3 23 10.6	9.86183
15	16 23 16.46	25 37 14.1	7936232	2 48.8	343 24 51.2	3 23 26.0	9.86179
16	16 27 30.31	25 49 15.6	7882328	2 48.9	345 0 4.9	3 23 32.0	9.86175
17	16 31 32.75	26 0 43.9	7827841	2 49.0	346 35 19.7	3 23 23.7	9.86171
18	16 35 23.65	26 11 39.1	7772754	2 49.1	348 10 35.8	3 23 16.0	9.86167
19	16 39 22.90	26 22 0.9	7717067	2 49.1	349 45 53.2	3 23 54.0	9.86163
20	16 43 30.35	26 31 49.4	7662775	2 49.1	351 21 12.0	3 24 22.7	9.86159
21	16 47 15.89	26 41 4.4	7608275	2 49.1	352 56 32.1	3 24 42.0	9.86155
22	16 51 9.35	26 49 45.9	7544262	2 49.1	354 31 53.5	3 25 22.0	9.86151
23	16 55 0.60	26 57 54.0	7482232	2 49.0	356 7 16.2	3 19 52.7	9.86147
24	16 58 49.49	27 5 22.7	7429482	2 48.9	357 42 40.5	3 18 44.3	9.86143
25	17 2 35.87	27 12 30.1	7370102	2 48.7	359 18 6.1	3 17 26.6	9.86139
26	17 6 19.39	27 18 52.2	7312102	2 48.5	0 53 33.1	3 15 59.8	9.86135
27	17 10 0.48	27 24 53.3	7249470	2 48.2	2 29 1.5	3 14 23.9	9.86131
28	17 13 38.38	27 30 15.3	7188199	2 47.9	4 4.31.4	3 12 39.0	9.86127
29	17 17 13.09	27 35 4.7	7126289	2 47.5	5 40. 2. "		9.86123
30	17 20 44.43	27 39 21.4	7063739	2 47.1	7 15.35		
31	17 24 12.21	27 43 5.8	7000549	2 46.6	8 5. "		
32	17 27 36.23	8. 27 46 18.1	6936716	2 46.1			

OCTOBER, 1842.

At Transit over the Meridian of Greenwich,

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass, Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
^h 15 ^m 25 ^s 22.63	+ 10.85	0.81	S. 21 55 24.9	- 46.7	11.4	11.8
15 29 35.67	10.84	0.82	22 14 38.8	47.3	11.4	11.9
15 33 48.56	10.83	0.82	22 33 24.0	46.3	11.5	12.0
15 38 1.26	10.82	0.83	22 51 40.0	45.1	11.6	12.1
15 42 13.68	10.81	0.85	23 9 26.5	43.8	11.7	12.2
15 46 25.78	10.80	0.86	23 26 43.0	42.6	11.9	12.4
15 50 37.46	10.78	0.88	23 43 29.0	41.3	12.0	12.5
15 54 48.68	10.76	0.89	23 59 44.3	40.6	12.1	12.6
15 58 59.22	10.73	0.90	24 15 28.3	38.7	12.3	12.8
16 3 9.14	10.70	0.91	24 30 40.9	37.4	12.4	12.9
16 7 18.28	10.66	0.92	24 45 21.6	36.0	12.6	13.1
16 11 26.57	10.62	0.94	24 59 30.0	34.7	12.8	13.3
16 15 33.87	10.58	0.95	25 13 6.3	33.3	12.9	13.4
16 19 40.10	10.53	0.97	25 26 9.7	32.0	13.1	13.6
16 23 45.12	10.48	0.98	25 38 40.4	30.6	13.3	13.8
16 27 48.83	10.42	0.99	25 50 38.1	29.2	13.4	13.9
16 31 51.11	10.36	1.00	26 0 2.6	27.8	13.6	14.1
16 35 51.84	9.99	1.02	26 12 53.9	26.4	13.8	14.3
16 39 50.90	9.92	1.03	26 23 11.3	25.1	13.9	14.5
16 43 48.13	9.84	1.05	26 32 56.4	23.7	14.1	14.7
16 47 43.43	9.76	1.07	26 42 7.5	22.3	14.3	14.9
16 51 36.68	9.67	1.09	26 50 43.0	20.9	14.5	15.1
16 55 27.60	9.57	1.10	26 58 49.1	19.3	14.7	15.3
16 59 16.19	9.47	1.12	27 6 19.3	18.1	14.9	15.5
17 3 2.23	9.36	1.14	27 13 17.3	16.7	15.1	15.7
17 6 45.59	9.24	1.15	27 19 41.4	15.3	15.3	15.9
17 10 26.09	9.12	1.17	27 25 32.6	13.9	15.6	16.2
17 14 3.58	8.99	1.19	27 30 50.7	12.3	15.8	16.4
17 17 37.85	8.86	1.20	27 35 36.3	11.3	16.0	16.6
17 21 8.72	8.71	1.22	27 39 49.0	9.8	16.2	16.8
17 24 36.01	8.56	1.23	27 43 29.6	8.5	16.5	17.1
17 27 50.20	8.40	1.25	27 46 22.1	7.2	16.6	17.2

NOVEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vel.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	17 27 36.23	S. 27 46 18.1	9.6936716	2 46.1	10 26 45.3	S. 3 4 10.9	9.86075
2	17 30 56.27	27 48 58.6	.6872242	2 45.5	12 2 22.4	3 1 42.2	.86065
3	17 34 12.12	27 51 7.6	.6807131	2 44.8	13 38 1.0	2 59 5.0	.86051
4	17 37 23.55	27 52 45.5	.6741387	2 44.0	15 13 41.2	2 56 19.5	.86039
5	17 40 30.83	27 53 52.7	.6675017	2 43.2	16 49 22.8	2 53 25.8	.86029
6	17 43 32.20	27 54 29.4	.6608032	2 42.3	18 25 6.0	2 50 23.9	.86020
7	17 46 28.92	27 54 36.1	.6540446	2 41.3	20 0 50.7	2 47 14.0	.86012
8	17 49 20.24	27 54 13.1	.6472275	2 40.2	21 36 36.9	2 43 56.3	.86005
9	17 52 5.88	27 53 20.9	.6403537	2 39.0	23 12 24.7	2 40 30.9	.86000
10	17 54 45.57	27 51 59.9	.6334252	2 37.7	24 48 14.1	2 36 57.9	.86000
11	17 57 19.04	27 50 10.5	.6264466	2 36.3	26 24 5.0	2 33 17.6	.85995
12	17 59 46.01	27 47 53.2	.6194194	2 34.8	27 59 57.6	2 29 30.0	.85990
13	18 2 6.19	27 45 8.2	.6123478	2 33.2	29 35 51.7	2 25 35.4	.85985
14	18 4 19.29	27 41 56.1	.6052365	2 31.5	31 11 47.4	2 21 33.9	.85980
15	18 6 23.03	27 38 17.2	.5980904	2 29.6	32 47 44.8	2 17 25.7	.85975
16	18 8 23.12	27 34 11.7	.5909146	2 27.6	34 23 43.8	2 13 11.0	.85970
17	18 10 13.27	27 29 40.3	.5837160	2 25.5	35 59 44.5	2 8 49.9	.85965
18	18 11 55.19	27 24 43.1	.5765014	2 23.2	37 35 46.8	2 4 22.8	.85960
19	18 13 28.60	27 19 20.3	.5692781	2 20.8	39 11 50.7	1 59 49.7	.85955
20	18 14 53.21	27 13 32.0	.5620544	2 18.3	40 47 56.4	1 55 10.9	.85950
21	18 16 8.77	27 7 18.4	.5548394	2 15.6	42 24 3.7	1 50 26.6	.85945
22	18 17 15.02	27 0 39.8	.5476430	2 12.7	44 0 12.7	1 45 37.0	.85940
23	18 18 11.69	26 53 36.0	.5404761	2 9.7	45 36 23.4	1 40 42.3	.85935
24	18 18 58.51	26 46 7.2	.5333505	2 6.5	47 12 35.8	1 35 42.8	.85930
25	18 19 35.80	26 38 13.3	.5262789	2 3.2	48 48 49.9	1 30 38.7	.85925
26	18 20 1.82	26 29 54.3	.5192750	1 59.7	50 25 5.7	1 25 30.2	.85920
27	18 20 17.92	26 21 10.1	.5123534	1 56.0	52 1 23.3	1 20 17.6	.85915
28	18 20 23.89	26 12 0.4	.5055299	1 52.2	53 37 42.6	1 15 1.1	.85910
29	18 20 18.13	26 2 25.0	.4988218	1 48.2	55 14 3.7	1 9 40.9	.85905
30	18 20 2.00	25 52 23.9	.4922476	1 43.9	56 50 26.5	1 4 17.3	.85900
31	18 19 34.94	S. 25 41 56.9	9.4858263	1 39.5	58 26 51.1	S. 0 58 50.6	9.85895

NOVEMBER, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi- diameter.</i>	<i>Hor. Par.</i>
^h 17 ^m 27 ^s 59·50	+ 8·40	1·25	S. 27° 46' 38"·1	- 7·2	16·6	17·3
17 31 18·99	8·22	1·28	27 49 14·9	5·9	16·9	17·6
17 34 34·26	8·04	1·30	27 51 20·3	4·6	17·2	17·9
17 37 45·07	7·85	1·32	27 52 54·6	3·3	17·4	18·1
17 40 51·20	7·65	1·34	27 53 58·3	2·0	17·7	18·4
17 43 52·39	7·44	1·36	27 54 31·6	- 0·8	18·0	18·7
17 46 48·39	7·22	1·38	27 54 35·0	+ 0·5	18·3	19·0
17 49 38·95	6·98	1·40	27 54 8·8	1·7	18·6	19·3
17 52 23·81	6·74	1·43	27 53 13·4	2·9	18·9	19·6
17 55 2·69	6·48	1·45	27 51 49·3	4·1	19·1	19·9
17 57 35·32	6·22	1·47	27 49 57·0	5·3	19·4	20·2
18 0 1·42	5·94	1·50	27 47 36·8	6·4	19·8	20·6
18 2 20·70	5·66	1·52	27 44 49·1	7·6	20·1	20·9
18 4 32·88	5·35	1·55	27 41 34·3	8·7	20·4	21·2
18 6 37·67	5·04	1·57	27 37 52·9	9·8	20·8	21·6
18 8 34·79	4·71	1·60	27 33 45·1	10·9	21·1	21·9
18 10 23·95	4·38	1·62	27 29 11·5	11·9	21·5	22·3
18 12 4·86	4·03	1·65	27 24 12·2	13·0	21·8	22·7
18 13 37·27	3·67	1·67	27 18 47·3	14·1	22·2	23·1
18 15 0·87	3·29	1·70	27 12 57·2	15·2	22·6	23·5
18 16 15·42	2·91	1·73	27 6 42·0	16·2	23·0	23·9
18 17 20·66	2·51	1·76	27 0 1·8	17·2	23·4	24·3
18 18 16·32	2·11	1·79	26 52 56·6	18·2	23·8	24·7
18 19 2·16	1·70	1·81	26 45 26·6	19·2	24·1	25·1
18 19 37·98	1·28	1·83	26 37 31·6	20·3	24·5	25·5
18 20 3·56	0·85	1·86	26 29 11·7	21·3	24·9	25·9
18 20 18·76	+ 0·41	1·88	26 20 26·8	22·4	25·4	26·4
18 20 23·38	- 0·03	1·91	26 11 16·6	23·4	25·8	26·8
18 20 17·31	0·48	1·94	26 1 40·8	24·5	26·2	27·2
18 20 0·43	0·93	1·96	25 51 39·6	25·6	26·6	27·6
18 19 32·67	- 1·38	1·98	S. 25 41 12·7	+ 26·7	26·9	28·0

DECEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Lat. East
	Noon.	Noon.	Noon.		Noon.	Noon.	
1	18 19 34.94	S. 25 41 56.9	9.4858263	1 39.5	58 26 51.1	S. 0 58 50.6	9.85
2	18 18 56.95	25 31 3.9	.4795783	1 34.9	60 3 17.5	0 53 21.0	.85
3	18 18 8.08	25 19 44.6	.4735248	1 30.2	61 39 45.7	0 47 48.7	.85
4	18 17 8.45	25 7 58.9	.4676883	1 25.3	63 16 15.7	0 42 14.0	.85
5	18 15 58.20	24 55 46.9	.4620923	1 20.2	64 52 47.5	0 36 37.3	.85
6	18 14 37.57	24 43 8.8	.4567612	1 14.9	66 29 21.1	0 30 58.7	.85
7	18 13 6.89	24 30 4.9	.4517193	1 9.5	68 5 56.5	0 25 18.5	.85
8	18 11 26.57	24 16 35.6	.4469911	1 3.9	69 42 33.7	0 19 37.0	.85
9	18 9 37.08	24 2 41.8	.4426014	0 58.1	71 19 12.7	0 13 54.4	.85
10	18 7 39.00	23 48 24.4	.4385746	0 52.2	72 55 53.5	0 8 11.1	.85
11	18 5 33.02	23 33 44.8	.4349338	0 46.2	74 32 36.2	S. 0 2 27.3	.85
12	18 3 19.91	23 18 44.5	.4317006	0 40.1	76 9 20.7	N. 0 3 16.8	.85
13	18 1 0.49	23 3 25.5	.4288961	0 33.8	77 46 6.9	0 9 0.8	.85
14	17 58 35.65	22 47 50.5	.4265389	0 27.5	79 22 55.0	0 14 44.4	.85
15	17 56 6.44	22 32 2.0	.4246445	0 21.1	80 59 44.9	0 20 27.5	.85
16	17 53 33.86	22 16 3.2	.4232251	0 14.6	82 36 36.5	0 26 9.7	.85
17	17 50 59.00	21 59 57.4	.4222917	0 8.1	84 13 29.9	0 31 50.7	.85
18	17 48 22.99	21 43 48.4	.4218512	{ $\frac{0}{m} \frac{1.6}{35.1}$ }	85 50 25.1	0 37 30.3	.85
19	17 45 46.92	21 27 40.6	.4219070	23 48.6	87 27 21.9	0 43 8.2	.85
20	17 43 11.92	21 11 37.9	.4224584	23 42.1	89 4 20.6	0 48 44.2	.85
21	17 40 39.07	20 55 44.7	.4235012	23 35.7	90 41 20.9	0 54 17.8	.85
22	17 38 9.42	20 40 5.3	.4250273	23 29.4	92 18 22.9	0 59 49.0	.85
23	17 35 43.99	20 24 44.0	.4270267	23 23.1	93 55 26.6	1 5 17.4	.85
24	17 33 23.73	20 9 45.4	.4294860	23 16.9	95 32 31.9	1 10 42.8	.85
25	17 31 9.49	19 55 13.3	.4323885	23 10.9	97 9 38.8	1 16 4.8	.85
26	17 29 2.05	19 41 11.6	.4357150	23 5.0	98 46 47.3	1 21 23.3	.85
27	17 27 2.11	19 27 43.8	.4394454	22 59.3	100 23 57.4	1 26 37.9	.85
28	17 25 10.30	19 14 53.0	.4435581	22 53.6	102 1 9.0	1 31 48.4	.85
29	17 23 27.15	19 2 42.2	.4480295	22 48.1	103 38 20.1	1 36 1.6	.85
30	17 21 53.10	18 51 13.6	.4528352	22 42.8			.85
31	17 20 28.53	18 40 29.1	.4579515	22 37.6			.85
32	17 19 13.70	S. 18 30 30.1	9.4633548	22 32.6			.85

DECEMBER, 1842.

At-Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
18 19 32.67	- 1.38	1.98	S. 25 41 12.7	+ 26.7	26.9	28.0
18 18 54.06	1.83	2.00	25 30 20.0	27.8	27.3	28.4
18 18 4.65	2.28	2.08	25 19 1.2	28.8	27.7	28.8
18 17 4.58	2.72	2.06	25 7 16.3	29.9	28.1	29.2
18 15 53.98	3.16	2.09	24 55 5.4	31.0	28.5	29.6
18 14 33.10	3.57	2.12	24 42 28.7	32.1	28.9	30.0
18 13 2.27	3.98	2.14	24 29 26.5	33.1	29.1	30.3
18 11 21.90	4.37	2.16	24 15 59.1	34.1	29.4	30.6
18 9 32.47	4.74	2.17	24 2 7.6	35.1	29.7	30.9
18 7 34.56	5.08	2.19	23 47 52.8	36.1	30.0	31.2
18 5 28.85	5.38	2.21	23 33 16.2	37.0	30.3	31.5
18 3 16.11	5.66	2.22	23 18 19.1	37.8	30.5	31.7
18 0 57.15	5.90	2.23	23 3 3.7	38.5	30.7	31.9
17 58 32.85	6.10	2.24	22 47 32.5	39.1	30.9	32.1
17 56 4.24	6.26	2.25	22 31 48.1	39.6	31.1	32.2
17 53 32.30	6.38	2.25	22 15 53.5	39.9	31.2	32.4
17 50 58.12	6.45	2.25	21 59 51.9	40.1	31.3	32.5
{17 48 27.3}	{6.48}	{2.25}	{21 42 48.3}	{40.3}	{31.3}	{32.5}
17 48 13.15	6.39	2.24	21 11 45.5	39.7	31.3	32.5
17 40 40.96	6.28	2.23	20 55 56.5	39.2	31.2	32.4
17 38 11.93	6.12	2.22	20 40 21.0	38.6	31.1	32.3
17 35 47.04	5.93	2.21	20 25 3.5	37.7	31.0	32.2
17 33 27.26	5.70	2.19	20 10 8.2	36.8	30.9	32.1
17 31 13.42	5.44	2.18	19 55 39.0	35.6	30.7	31.9
17 29 6.29	5.14	2.16	19 41 39.8	34.3	30.5	31.7
17 27 6.86	4.82	2.14	19 28 14.0	32.8	30.3	31.5
17 25 14.87	4.48	2.12	19 15 24.8	31.2	30.0	31.2
17 23 31.73	4.11	2.10	19 3 15.1	29.5	29.7	30.9
17 21 57.59	3.73	2.08	18 51 47.1	27.8	29.4	30.6
17 20 32.83	3.33	2.06	18 41 2.6	26.0	29.1	30.3
17 19 17.73	2.92	2.03	18 31 3.2	24.1	28.8	29.9
18 48	- 2.51	2.00	S. 18 21 50.0	+ 22.2	28.4	29.5

JANUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	M
1	21 54 54.95	S. 13 50 11.0	0.2772020	3 11.9	356 18 46.3	S. 1 27 32.5	0.143
2	21 57 54.35	13 33 35.4	.2784055	3 10.9	356 56 18.7	1 26 47.4	.143
3	22 0 53.34	13 16 52.4	.2796062	3 9.9	357 33 49.4	1 26 1.6	.143
4	22 3 51.91	13 0 2.2	.2808041	3 9.0	358 11 18.4	1 25 15.3	.143
5	22 6 50.07	12 43 4.9	.2819992	3 8.0	358 48 45.5	1 24 28.4	.144
6	22 9 47.84	12 26 0.7	.2831914	3 7.0	359 26 10.8	1 23 41.0	.144
7	22 12 45.20	12 8 49.9	.2843806	3 6.1	0 3 34.1	1 22 58.0	.144
8	22 15 42.18	11 51 32.5	.2855667	3 5.1	0 40 55.6	1 22 4.4	.144
9	22 18 38.76	11 34 9.0	.2867496	3 4.1	1 18 15.0	1 21 15.4	.144
10	22 21 34.96	11 16 39.4	.2879293	3 3.1	1 55 32.5	1 20 25.8	.145
11	22 24 30.78	10 59 4.0	.2891057	3 2.1	2 32 48.0	1 19 35.6	.145
12	22 27 26.22	10 41 23.0	.2902786	3 1.1	3 10 1.3	1 18 45.0	.145
13	22 30 21.29	10 23 36.5	.2914481	3 0.1	3 47 12.6	1 17 53.9	.145
14	22 33 15.99	10 5 44.9	.2926140	2 59.1	4 24 21.7	1 17 2.2	.145
15	22 36 10.33	9 47 48.4	.2937765	2 58.1	5 1 28.6	1 16 10.1	.146
16	22 39 4.31	9 29 47.0	.2949354	2 57.0	5 38 33.3	1 15 17.5	.146
17	22 41 57.93	9 11 41.2	.2960908	2 55.9	6 15 35.8	1 14 24.4	.146
18	22 44 51.20	8 53 31.0	.2972425	2 54.9	6 52 36.0	1 13 30.9	.146
19	22 47 44.12	8 35 16.8	.2983907	2 53.8	7 29 33.9	1 12 36.9	.146
20	22 50 36.71	8 16 58.6	.2995354	2 52.7	8 6 29.4	1 11 42.4	.147
21	22 53 28.96	7 58 36.8	.3006767	2 51.6	8 43 22.6	1 10 47.5	.147
22	22 56 20.27	7 40 11.4	.3018144	2 50.5	9 20 13.3	1 9 52.2	.147
23	22 59 12.47	7 21 42.8	.3029488	2 49.4	9 57 1.6	1 8 56.5	.147
24	23 2 3.75	7 3 11.1	.3040798	2 48.3	10 33 47.4	1 8 0.4	.148
25	23 4 54.71	6 44 36.6	.3052073	2 47.2	11 10 30.7	1 7 3.8	.148
26	23 7 45.38	6 25 59.3	.3063318	2 46.1	11 47 11.5	1 6 6.9	.148
27	23 10 35.76	6 7 19.4	.3074529	2 45.0	12 23 49.7	1 5 9.6	.148
28	23 13 25.86	5 48 37.3	.3085706	2 43.9	13 0 25.3	1 4 11.9	.149
29	23 16 15.68	5 29 52.9	.3096851	2 42.8	13 36 58.2	1 3 18.8	.149
30	23 19 5.24	5 11 6.5	.3107964	2 41.7	14 13 28.5	1 2 15.1	.149
31	23 21 54.55	4 52 18.3	.3119044	2 40.6	14 49 56.1	1 1 1	.149
32	23 24 43.62	S. 4 33 28.4	0.3130089	2 39.5	15 26 21.0	S. 1	.149

JANUARY, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi- diameter.</i>	<i>Hor. Par.</i>
<small>h m s</small>	<small>°</small>	<small>°</small>	<small>° ′ ″</small>	<small>″</small>	<small>″</small>	<small>″</small>
21 55 18·88	+ 7·48	0·16	S. 13 47 58·8	+41·3	2·3	4·5
21 58 18·11	7·46	0·16	13 31 22·9	41·6	2·3	4·5
22 1 16·92	7·44	0·16	13 14 39·6	41·9	2·3	4·5
22 4 15·31	7·42	0·16	12 57 49·1	42·2	2·3	4·5
22 7 13·30	7·41	0·16	12 40 51·6	42·5	2·3	4·5
22 10 10·89	7·39	0·15	12 23 47·2	42·8	2·3	4·5
22 13 8·09	7·38	0·15	12 6 36·2	43·1	2·3	4·5
22 16 4·89	7·36	0·15	11 49 18·7	43·4	2·3	4·4
22 19 1·31	7·35	0·15	11 31 55·1	43·7	2·3	4·4
22 21 57·33	7·33	0·15	11 14 25·5	43·9	2·3	4·4
22 24 52·98	7·31	0·15	10 56 50·1	44·1	2·3	4·4
22 27 48·25	7·30	0·15	10 39 9·1	44·3	2·3	4·4
22 30 43·15	7·28	0·15	10 21 22·8	44·5	2·3	4·4
22 33 37·68	7·27	0·15	10 3 31·4	44·7	2·3	4·4
22 36 31·85	7·25	0·15	9 45 35·0	44·9	2·3	4·4
22 39 25·66	7·24	0·15	9 27 33·9	45·1	2·2	4·3
22 42 19·11	7·22	0·15	9 9 28·3	45·3	2·2	4·3
22 45 12·21	7·21	0·15	8 51 18·4	45·5	2·2	4·3
22 48 4·97	7·19	0·15	8 33 4·5	45·7	2·2	4·3
22 50 57·38	7·18	0·15	8 14 46·7	45·9	2·2	4·3
22 53 49·46	7·16	0·15	7 56 25·2	46·0	2·2	4·3
22 56 41·21	7·15	0·15	7 38 0·3	46·2	2·2	4·3
22 59 32·64	7·13	0·15	7 19 32·2	46·3	2·2	4·3
23 2 23·75	7·12	0·15	7 1 1·0	46·4	2·2	4·3
23 5 14·55	7·10	0·15	6 42 26·9	46·5	2·2	4·2
23 8 5·06	7·09	0·14	6 23 50·2	46·6	2·2	4·2
23 10 55·27	7·08	0·14	6 5 10·9	46·7	2·2	4·2
23 13 45·20	7·07	0·14	5 46 29·4	46·8	2·2	4·2
23 16 34·86	7·06	0·14	5 27 45·6	46·9	2·2	4·2
23 19 24·27	7·05	0·14	5 8 59·9	47·0	2·2	4·2
23 22 13·42	7·04	0·14	4 50 12·3	47·0	2·2	4·2

FEBRUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. V.
	Noon.	Noon.	Noon.		Noon.	Noon.	No.
1	h m s 23 24 43.62	S. 4 39 28.4	0.3130089	2 39.5	15 26 21.0	S. 1 0 17.5	0.1502
2	23 27 32.45	4 14 37.1	.3141099	2 38.4	16 2 43.2	0 59 18.1	.1504
3	23 30 21.06	3 55 44.5	.3152074	2 37.3	16 59 2.6	0 58 18.3	.1507
4	23 33 9.44	3 36 50.8	.3163018	2 36.1	17 15 19.2	0 57 18.2	.1510
5	23 35 57.62	3 17 56.1	.3173914	2 35.0	17 51 33.1	0 56 17.8	.1513
6	23 38 45.60	2 59 0.8	.3184777	2 33.8	18 27 44.0	0 55 17.2	.1515
7	23 41 33.39	2 40 4.8	.3195601	2 32.7	19 3 52.1	0 54 16.2	.1518
8	23 44 20.99	2 21 8.6	.3206385	2 31.5	19 39 57.4	0 53 14.9	.1521
9	23 47 8.42	2 0 12.1	.3217128	2 30.4	20 15 59.7	0 52 13.4	.1524
10	23 49 55.68	1 43 15.7	.3227830	2 29.2	20 51 59.1	0 51 11.6	.1527
11	23 52 42.77	1 24 19.5	.3238489	2 28.1	21 27 55.3	0 50 9.5	.1530
12	23 55 29.71	1 5 23.7	.3249105	2 26.9	22 3 49.0	0 49 7.2	.1533
13	23 58 16.49	0 46 28.5	.3259678	2 25.8	22 39 39.5	0 48 4.7	.1536
14	0 1 3.13	0 27 34.1	.3270207	2 24.6	23 15 27.0	0 47 1.9	.1539
15	0 3 49.64	S. 0 40.6	.3280693	2 23.4	23 51 11.5	0 45 59.0	.1542
16	0 6 36.02	N. 0 10 11.7	.3291134	2 22.2	24 26 52.9	0 44 55.8	.1545
17	0 9 22.28	0 29 2.7	.3301530	2 21.1	25 2 31.2	0 43 52.4	.1548
18	0 12 8.42	0 47 52.2	.3311881	2 19.9	25 38 6.4	0 42 48.8	.1551
19	0 14 54.45	1 6 40.0	.3322189	2 18.8	26 13 38.6	0 41 45.0	.1554
20	0 17 40.38	1 25 26.0	.3332453	2 17.6	26 49 7.6	0 40 41.1	.1557
21	0 20 26.22	1 44 9.9	.3342673	2 16.4	27 24 33.5	0 39 37.0	.1560
22	0 23 11.97	2 2 51.7	.3352850	2 15.2	27 59 56.8	0 38 32.7	.1563
23	0 25 57.64	2 21 31.1	.3362985	2 14.1	28 35 15.9	0 37 28.3	.1567
24	0 28 43.24	2 40 7.9	.3373076	2 12.9	29 10 32.3	0 36 23.8	.1571
25	0 31 28.78	2 58 42.1	.3383125	2 11.7	29 45 45.5	0 35 19.1	.1575
26	0 34 14.26	3 17 13.5	.3393130	2 10.5	30 20 55.5	0 34 14.3	.1579
27	0 36 59.71	3 35 41.9	.3403092	2 9.3	30 56 2.3	0 33 9.4	.1583
28	0 39 45.12	3 54 7.2	.3413011	2 8.1	31 31 5.9	0 32 4.4	.1587
29	0 42 30.51	N. 4 12 29.3	0.3422887	2 7.0	32 6 6.2	S. 0 30 59.3	.1591

FEBRUARY, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
^h 23 ^m 25 ^s 2'33	+ 7'03	0'14	S. 4 31 23'2	+47'1	2'2	4'2
23 27 51'00	7'02	0'14	4 19 32'6	47'1	2'2	4'2
23 30 39'45	7'01	0'14	3 53 40'8	47'2	2'2	4'2
23 33 27'68	7'00	0'14	3 34 47'8	47'2	2'2	4'2
23 36 15'71	6'99	0'14	3 15 54'0	47'3	2'1	4'1
23 39 3'34	6'98	0'14	2 56 59'4	47'3	2'1	4'1
23 41 51'17	6'97	0'14	2 39 4'4	47'3	2'1	4'1
23 44 38'62	6'97	0'14	2 19 8'9	47'3	2'1	4'1
23 47 25'89	6'96	0'14	2 0 13'4	47'3	2'1	4'1
23 50 13'00	6'96	0'14	1 41 18'0	47'3	2'1	4'1
23 52 59'94	6'95	0'14	1 22 22'7	47'3	2'1	4'1
23 55 46'73	6'95	0'14	1 3 27'9	47'3	2'1	4'1
23 58 33'37	6'94	0'14	0 44 33'7	47'2	2'1	4'0
0 1 19'86	6'94	0'14	0 25 40'2	47'2	2'1	4'0
0 4 6'22	6'93	0'14	S.0 6 47'8	47'1	2'1	4'0
0 6 52'43	6'92	0'14	N.0 18 3'5	47'1	2'1	4'0
0 9 38'56	6'92	0'14	0 30 53'4	47'0	2'1	4'0
0 12 24'55	6'92	0'14	0 49 41'9	47'0	2'1	4'0
0 15 10'44	6'91	0'14	1 8 28'6	46'9	2'1	4'0
0 17 56'22	6'91	0'14	1 27 18'4	46'8	2'1	4'0
0 20 41'92	6'90	0'14	1 45 56'2	46'7	2'1	4'0
0 23 27'82	6'90	0'14	2 4 36'9	46'6	2'1	4'0
0 26 13'05	6'90	0'14	2 23 15'1	46'5	2'1	4'0
0 28 58'51	6'89	0'14	2 41 50'8	46'4	2'0	3'9
0 31 42'91	6'89	0'14	3 0 23'8	46'3	2'0	3'9
0 34 29'25	6'89	0'14	3 18 54'0	46'2	2'0	3'9
0 37 14'56	6'89	0'14	3 37 21'2	46'1	2'0	3'9
0 39 59'83	6'89	0'14	3 55 45'3	46'0	2'0	3'9
0 42 45'09	+ 6'89	0'14	N.4 14 6'2	+45'8	2'0	3'9

MARCH, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	No.
1	0 42 30.51	N. 4 12 29.3	0.3422887	2 7.0	82 6 6.2	S. 0 30 59.3	0.158
2	0 45 15.89	4 30 47.9	0.3432718	2 5.8	32 41 3.2	0 29 54.1	0.159
3	0 48 1.26	4 49 3.1	0.3442504	2 4.6	33 15 56.9	0 28 48.8	0.159
4	0 50 46.64	5 7 14.5	0.3452244	2 3.4	33 50 47.4	0 27 43.4	0.159
5	0 53 32.02	5 25 22.0	0.3461937	2 2.2	34 25 34.5	0 26 38.0	0.160
6	0 56 17.43	5 43 25.5	0.3471583	2 1.0	35 0 18.4	0 25 32.5	0.160
7	0 59 2.87	6 1 24.8	0.3481180	1 59.9	35 34 58.9	0 24 27.0	0.160
8	1 1 48.34	6 19 19.9	0.3490727	1 58.7	36 9 36.1	0 23 21.4	0.161
9	1 4 33.85	6 37 10.4	0.3500224	1 57.5	36 44 9.9	0 22 15.8	0.161
10	1 7 19.41	6 54 56.2	0.3509669	1 56.3	37 18 40.4	0 21 10.1	0.161
11	1 10 5.02	7 12 37.3	0.3519062	1 55.1	37 53 7.6	0 20 4.4	0.161
12	1 12 50.69	7 30 13.4	0.3528402	1 53.9	38 27 31.3	0 18 58.8	0.162
13	1 15 36.42	7 47 44.4	0.3537687	1 52.8	39 1 51.8	0 17 53.1	0.162
14	1 18 22.23	8 5 10.1	0.3546919	1 51.6	39 36 8.8	0 16 47.4	0.162
15	1 21 8.10	8 22 30.3	0.3556095	1 50.4	40 10 22.4	0 15 41.7	0.163
16	1 23 54.05	8 39 45.0	0.3565217	1 49.2	40 44 32.7	0 14 36.1	0.163
17	1 26 40.09	8 56 54.0	0.3574284	1 48.0	41 18 39.5	0 13 30.4	0.163
18	1 29 26.21	9 13 57.0	0.3583296	1 46.8	41 52 43.0	0 12 24.8	0.163
19	1 32 12.42	9 30 54.0	0.3592252	1 45.7	42 26 43.1	0 11 19.2	0.163
20	1 34 58.73	9 47 44.8	0.3601152	1 44.5	43 0 39.7	0 10 13.7	0.163
21	1 37 45.14	10 4 29.3	0.3609998	1 43.3	43 34 33.0	0 9 8.2	0.163
22	1 40 31.66	10 21 7.3	0.3618789	1 42.1	44 8 22.8	0 8 2.8	0.163
23	1 43 18.29	10 37 38.8	0.3627526	1 40.9	44 42 9.2	0 6 57.4	0.163
24	1 46 5.03	10 54 3.5	0.3636209	1 39.8	45 15 52.2	0 5 52.2	0.163
25	1 48 51.90	11 10 21.4	0.3644839	1 38.6	45 49 31.8	0 4 46.9	0.163
26	1 51 38.90	11 26 32.3	0.3653414	1 37.5	46 23 8.0	0 3 41.8	0.163
27	1 54 26.03	11 42 36.1	0.3661936	1 36.3	46 56 40.8	0 2 36.8	0.163
28	1 57 13.31	11 58 32.7	0.3670402	1 35.2	47 30 10.1	31.8	0.163
29	2 0 0.73	12 14 21.9	0.3678814	1 34.0	48 3 36.1		0.163
30	2 2 48.31	12 30 3.7	0.3687171	1 32.9	48 36 5.4		0.163
31	2 5 36.05	12 45 37.9	0.3695473	1 31.7	49 10		0.163
32	2 8 23.96	N. 13 1 4.5	0.3703718	1 30.6			0.163

MARCH, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi- diameter.	Hor. Par.
<small>h m s</small> 0 42 45·09	<small>s</small> + 6·89	<small>s</small> 0·14	<small>° ′ ″</small> N. 4 14 6·2	<small>″</small> +45·8	<small>″</small> 2·0	<small>″</small> 3·9
0 45 30·33	6·89	0·14	4 32 23·7	45·7	2·0	3·9
0 48 15·57	6·89	0·14	4 50 37·6	45·5	2·0	3·9
0 51 0·81	6·89	0·14	5 8 47·8	45·4	2·0	3·9
0 53 46·06	6·89	0·14	5 26 54·1	45·2	2·0	3·9
0 56 31·33	6·89	0·13	5 44 56·4	45·1	2·0	3·9
0 59 16·64	6·89	0·13	6 2 54·5	44·9	2·0	3·8
1 2 1·97	6·89	0·13	6 20 48·2	44·7	2·0	3·8
1 4 47·35	6·89	0·13	6 38 37·5	44·5	2·0	3·8
1 7 32·78	6·89	0·13	6 56 22·1	44·3	2·0	3·8
1 10 18·26	6·90	0·13	7 14 1·9	44·1	2·0	3·8
1 13 3·80	6·90	0·13	7 31 36·7	43·9	2·0	3·8
1 15 49·40	6·90	0·13	7 49 6·4	43·6	2·0	3·8
1 18 35·08	6·90	0·13	8 6 30·8	43·3	2·0	3·8
1 21 20·82	6·91	0·13	8 23 49·8	43·0	2·0	3·8
1 24 6·64	6·91	0·13	8 41 3·2	42·7	2·0	3·8
1 26 52·55	6·91	0·13	8 58 10·8	42·5	2·0	3·8
1 29 38·54	6·92	0·13	9 15 12·6	42·3	2·0	3·8
1 32 24·62	6·92	0·13	9 32 8·3	42·1	2·0	3·8
1 35 10·81	6·93	0·13	9 48 57·8	41·9	1·9	3·7
1 37 57·09	6·93	0·13	10 5 41·0	41·7	1·9	3·7
1 40 43·48	6·94	0·13	10 22 17·8	41·4	1·9	3·7
1 43 29·98	6·94	0·13	10 38 48·0	41·1	1·9	3·7
1 46 16·60	6·95	0·13	10 55 11·5	40·8	1·9	3·7
1 49 3·34	6·95	0·13	11 11 28·1	40·5	1·9	3·7
1 51 50·22	6·96	0·13	11 27 37·7	40·2	1·9	3·7
1 54 37·23	6·96	0·13	11 43 40·3	39·9	1·9	3·7
1 57 23·95	6·97	0·13	11 59 35·6	39·6	1·9	3·7
1 59 10·68	6·97	0·13	12 15 23·6	39·3	1·9	3·7
2 0 57·41	6·98	0·13	12 31 4·2	39·0	1·9	3·7
2 2 44·13	6·99	0·13	12 46 37·2	38·7	1·9	3·7
2 4 30·85	7·00	0·13	N.13 2 2·5	+38·4	1·9	3·7

APRIL, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Lat. Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	M
1	h m s 2 8 23·96	N. 13 1 4·5	0·8703718	1 30·6	49 43 33·3	N. 0 2 47·0	0·169
2	2 11 12·03	13 16 23·2	·3711905	1 29·4	50 16 45·5	0 3 51·4	·170
3	2 14 0·29	13 31 33·9	·3720035	1 28·3	50·49 54·4	0 4 55·7	·170
4	2 16 48·72	13 46 36·5	·3728105	1 27·1	51 22 59·8	0 5 59·8	·170
5	2 19 37·33	14 1 31·0	·3736116	1 26·0	51 56 1·8	0 7 3·8	·171
6	2 22 26·13	14 16 17·1	·3744066	1 24·8	52 29 0·4	0 8 7·6	·171
7	2 25 15·13	14 30 54·8	·3751954	1 23·7	53 1 55·6	0 9 11·3	·171
8	2 28 4·31	14 45 23·9	·3759780	1 22·6	53 34 47·4	0 10 14·8	·171
9	2 30 53·68	14 59 44·2	·3767542	1 21·5	54 7 35·7	0 11 18·2	·171
10	2 33 43·25	15 13 55·7	·3775241	1 20·4	54 40 20·7	0 12 21·4	·171
11	2 36 33·01	15 27 58·3	·3782876	1 19·3	55 13 2·3	0 13 24·4	·171
12	2 39 22·97	15 41 51·8	·3790445	1 18·2	55 45 40·5	0 14 27·2	·171
13	2 42 13·11	15 55 36·1	·3797949	1 17·1	56 18 15·2	0 15 29·8	·171
14	2 45 3·46	16 9 11·0	·3805387	1 16·0	56 50 46·6	0 16 32·3	·171
15	2 47 53·99	16 22 36·5	·3812759	1 14·9	57 23 14·7	0 17 34·5	·171
16	2 50 44·72	16 35 52·5	·3820066	1 13·8	57 55 39·3	0 18 36·5	·171
17	2 53 35·64	16 48 58·8	·3827307	1 12·7	58 28 0·6	0 19 38·3	·171
18	2 56 26·75	17 1 55·3	·3834481	1 11·6	59 0 18·6	0 20 40·0	·171
19	2 59 18·06	17 14 42·0	·3841590	1 10·5	59 32 33·2	0 21 41·4	·171
20	3 2 9·55	17 27 18·7	·3848633	1 9·4	60 4 44·4	0 22 42·5	·171
21	3 5 1·24	17 39 45·3	·3855612	1 8·3	60 36 52·4	0 23 43·5	·171
22	3 7 53·13	17 52 1·7	·3862525	1 7·2	61 8 57·0	0 24 44·2	·171
23	3 10 45·21	18 4 7·9	·3869373	1 6·2	61 40 58·3	0 25 44·7	·171
24	3 13 37·48	18 16 3·7	·3876158	1 5·1	62 12 56·3	0 26 45·0	·171
25	3 16 29·95	18 27 49·1	·3882878	1 4·1	62 44 51·1	0 27 45·0	·171
26	3 19 22·61	18 39 24·0	·3889533	1 3·0	63 16 42·5	0 28 44·8	·171
27	3 22 15·47	18 50 48·3	·3896122	1 2·0	63 48 30·7	0 29 44·3	·171
28	3 25 8·53	19 2 1·8	·3902646	1 0·9	64 20 15·6	0 30 43·6	·171
29	3 28 1·78	19 13 4·6	·3909103	0 59·9	64 51 57·2	0 31 42·6	·171
30	3 30 55·23	19 23 56·5	·3915494	0 58·8	65 23 35·6	0 32 41·4	·171
31	3 33 48·88	N. 19 34 37·5	0·3921817	0 57·8	65 55 10·1		

APRIL, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi- diameter.	Hor. Par.
^h 2 ^m 8 ^s 34.53	+ 6.99	0.13	N. 13 2 2.5	+ 38.4	1.9	3.7
2 11 22.48	7.00	0.13	13 17 19.9	38.1	1.9	3.6
2 14 10.61	7.00	0.13	13 32 29.4	37.8	1.9	3.6
2 16 58.92	7.01	0.13	13 47 30.9	37.4	1.9	3.6
2 19 47.41	7.01	0.13	14 2 24.1	37.1	1.9	3.6
2 22 36.09	7.02	0.13	14 17 9.0	36.7	1.9	3.6
2 25 24.97	7.03	0.13	14 31 45.5	36.4	1.9	3.6
2 28 14.03	7.04	0.13	14 46 13.4	36.0	1.9	3.6
2 31 3.28	7.05	0.13	15 0 32.6	35.7	1.9	3.6
2 33 52.73	7.06	0.13	15 14 43.0	35.3	1.9	3.6
2 36 42.37	7.07	0.13	15 28 44.4	34.9	1.9	3.6
2 39 32.21	7.07	0.13	15 42 36.7	34.6	1.9	3.6
2 42 22.23	7.08	0.13	15 56 19.9	34.2	1.9	3.6
2 45 12.46	7.08	0.13	16 9 53.7	33.8	1.9	3.6
2 48 2.87	7.09	0.13	16 23 18.1	33.4	1.9	3.6
2 50 53.48	7.10	0.13	16 36 33.0	33.0	1.9	3.6
2 53 44.28	7.11	0.13	16 49 38.2	32.6	1.9	3.6
2 56 35.27	7.12	0.13	17 2 33.6	32.2	1.8	3.5
2 59 26.46	7.13	0.13	17 15 19.2	31.8	1.8	3.5
3 2 17.83	7.14	0.13	17 27 54.8	31.4	1.8	3.5
3 5 9.40	7.15	0.13	17 40 20.4	30.9	1.8	3.5
3 8 1.17	7.15	0.12	17 52 35.8	30.5	1.8	3.5
3 10 53.13	7.16	0.12	18 4 41.0	30.1	1.8	3.5
3 13 45.28	7.16	0.12	18 16 35.8	29.7	1.8	3.5
3 16 37.63	7.17	0.12	18 28 20.2	29.2	1.8	3.5
3 19 30.18	7.18	0.12	18 39 54.1	28.7	1.8	3.5
3 22 22.92	7.19	0.12	18 51 17.4	28.3	1.8	3.5
3 25 15.86	7.20	0.12	19 2 30.0	27.8	1.8	3.5
3 28 8.99	7.21	0.12	19 13 31.9	27.4	1.8	3.5
3 31 2.12	7.22	0.12	19 24 22.9	26.9	1.8	3.5
3 34 5.25	7.23	0.12	N. 19 35 2.9	+ 26.4	1.8	3.5

MAY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Long. Red.
	Noon.	Noon.	Noon.		Noon.	Noon.	
	h m s	° ' "		h m	° ' "	° ' "	
1	3 33 48.88	N.19 34 37.5	0.3921817	0 57.8	65 55 10.8	N.0 33 39.9	0.1800
2	3 36 42.71	19 45 7.4	0.3928072	0 56.7	66 26 42.7	0 34 38.1	0.1801
3	3 39 36.75	19 55 26.2	0.3934257	0 55.7	66 58 11.4	0 35 36.1	0.1802
4	3 42 30.97	20 5 33.7	0.3940372	0 54.6	67 29 36.8	0 36 33.7	0.1803
5	3 45 25.37	20 15 30.0	0.3946417	0 53.6	68 0 59.1	0 37 31.1	0.1804
6	3 48 19.96	20 25 14.9	0.3952390	0 52.5	68 32 18.2	0 38 28.2	0.1805
7	3 51 14.73	20 34 48.4	0.3958290	0 51.5	69 3 34.0	0 39 25.0	0.1806
8	3 54 9.68	20 44 10.3	0.3964117	0 50.4	69 34 46.7	0 40 21.5	0.1807
9	3 57 4.79	20 53 20.6	0.3969870	0 49.4	70 5 56.2	0 41 17.7	0.1808
10	4 0 0.07	21 2 19.2	0.3975549	0 48.4	70 37 2.6	0 42 13.6	0.1809
11	4 2 55.50	21 11 6.0	0.3981153	0 47.4	71 8 5.8	0 43 9.2	0.1810
12	4 5 51.08	21 19 41.0	0.3986680	0 46.4	71 39 5.9	0 44 4.5	0.1811
13	4 8 46.81	21 28 4.1	0.3992132	0 45.4	72 10 2.8	0 44 59.4	0.1812
14	4 11 42.67	21 36 15.2	0.3997509	0 44.4	72 40 56.7	0 45 54.1	0.1813
15	4 14 38.67	21 44 14.3	0.4002810	0 43.4	73 11 47.4	0 46 48.5	0.1814
16	4 17 34.78	21 52 1.4	0.4008035	0 42.4	73 42 35.1	0 47 42.5	0.1815
17	4 20 31.02	21 59 36.4	0.4013185	0 41.4	74 13 19.7	0 48 36.2	0.1816
18	4 23 27.36	22 6 59.2	0.4018260	0 40.4	74 44 1.2	0 49 29.6	0.1817
19	4 26 23.81	22 14 9.9	0.4023260	0 39.4	75 14 39.7	0 50 22.7	0.1818
20	4 29 20.36	22 21 8.3	0.4028185	0 38.4	75 45 15.2	0 51 15.4	0.1819
21	4 32 17.00	22 27 54.4	0.4033035	0 37.4	76 15 47.6	0 52 7.8	0.1820
22	4 35 13.74	22 34 28.1	0.4037810	0 36.4	76 46 17.0	0 52 59.9	0.1821
23	4 38 10.55	22 40 49.5	0.4042511	0 35.4	77 16 43.5	0 53 51.7	0.1822
24	4 41 7.44	22 46 58.5	0.4047138	0 34.4	77 47 7.0	0 54 43.1	0.1823
25	4 44 4.41	22 52 55.0	0.4051689	0 33.4	78 17 27.5	0 55 34.2	0.1824
26	4 47 1.44	22 58 39.0	0.4056165	0 32.4	78 47 45.1	0 56 24.9	0.1825
27	4 49 58.54	23 4 10.5	0.4060565	0 31.4	79 17 59.7	0 57 15.3	0.1826
28	4 52 55.69	23 9 29.5	0.4064890	0 30.4	79 48 11.5	0 58 5.4	0.1827
29	4 55 52.90	23 14 36.0	0.4069137	0 29.5	80 18 20.3	0 58 55.1	0.1828
30	4 58 50.15	23 19 29.9	0.4073308	0 28.5	80 48 26.3	0 59 44.5	0.1829
31	5 1 47.45	23 24 11.2	0.4077401	0 27.5	81 18 29.4	1 0 33.5	0.1830

MAY, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi- diameter.</i>	<i>Hor. Par.</i>
<small>h m s</small>	<small>''</small>	<small>s</small>	<small>° ' "</small>	<small>''</small>	<small>''</small>	<small>''</small>
3 33 55·85	+ 7·23	0·12	N.19 35 2·9	+26·4	1·8	3·4
3 36 49·57	7·23	0·12	19 45 32·0	26·0	1·8	3·4
3 39 43·48	7·24	0·12	19 55 49·9	25·5	1·8	3·4
3 42 37·59	7·25	0·12	20 5 56·6	25·1	1·8	3·4
3 45 31·87	7·26	0·12	20 15 52·0	24·6	1·8	3·4
3 48 26·34	7·27	0·12	20 25 36·1	24·1	1·8	3·4
3 51 21·00	7·28	0·12	20 35 8·7	23·7	1·8	3·4
3 54 15·82	7·29	0·13	20 44 29·8	23·2	1·8	3·4
3 57 10·82	7·30	0·13	20 53 39·3	22·7	1·8	3·4
4 0 5·98	7·31	0·13	21 2 37·1	22·2	1·8	3·4
4 3 1·29	7·31	0·13	21 11 23·2	21·7	1·8	3·4
4 5 56·75	7·32	0·13	21 19 57·4	21·2	1·8	3·4
4 8 52·36	7·32	0·13	21 28 19·8	20·7	1·8	3·4
4 11 48·10	7·33	0·13	21 36 30·2	20·2	1·8	3·4
4 14 43·98	7·33	0·13	21 44 28·6	19·7	1·8	3·4
4 17 39·97	7·34	0·13	21 52 15·0	19·2	1·8	3·4
4 20 36·09	7·34	0·13	21 59 49·3	18·7	1·8	3·4
4 23 32·31	7·35	0·13	22 7 11·5	18·2	1·8	3·4
4 26 28·64	7·35	0·13	22 14 21·5	17·7	1·8	3·4
4 29 25·07	7·36	0·13	22 21 19·2	17·2	1·8	3·4
4 32 21·59	7·36	0·13	22 28 4·7	16·6	1·8	3·4
4 35 18·21	7·36	0·13	22 34 37·9	16·1	1·8	3·4
4 38 14·90	7·37	0·13	22 40 58·7	15·6	1·8	3·4
4 41 11·67	7·37	0·13	22 47 7·1	15·1	1·8	3·4
4 44 8·52	7·37	0·13	22 53 3·0	14·6	1·8	3·4
4 47 5·43	7·37	0·13	22 58 46·5	14·1	1·8	3·4
4 50 2·41	7·38	0·13	23 4 17·6	13·6	1·8	3·4
4 52 59·44	7·38	0·13	23 9 36·1	13·1	1·8	3·4
4 55 56·53	7·38	0·13	23 14 42·1	12·6	1·8	3·4
4 58 53·66	7·38	0·13	23 19 35·6	12·0	1·8	3·4
5 1 50·83	7·38	0·13	23 24 16·4	11·4	1·8	3·4
5 4 48·03	+ 7·38	0·13	N.23 28 44·7	+10·9	1·8	3·4

JUNE, 1842.

MEAN TIME.

Geocentric.				Heliocentric.		
Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. V.
Noon.	Noon.	Noon.		Noon.	Noon.	Ea.
h m s	° ' "	° ' "	h m	° ' "	N. ° ' "	° ' "
5 4 44.77	N. 23 28 39.9	0.4081414	0 26.5	81 48 29.7	N. 1 1 22.1	0.1924
5 7 42.12	23 32 55.9	0.4085348	0 25.5	82 18 27.2	1 2 10.4	0.1926
5 10 39.48	23 36 59.3	0.4089201	0 24.5	82 48 21.8	1 2 58.4	0.1929
5 13 36.85	23 40 50.0	0.4092973	0 23.5	83 18 13.6	1 3 46.0	0.1932
5 16 34.22	23 44 28.0	0.4096662	0 22.5	83 48 2.7	1 4 33.2	0.1935
5 19 31.59	23 47 53.3	0.4100268	0 21.5	84 17 48.9	1 5 20.0	0.1938
5 22 28.93	23 51 5.9	0.4103790	0 20.5	84 47 32.4	1 6 6.5	0.1941
5 25 26.24	23 54 5.8	0.4107228	0 19.5	85 17 13.2	1 6 52.6	0.1944
5 28 23.51	23 56 53.1	0.4110582	0 18.5	85 46 51.3	1 7 38.4	0.1947
5 31 20.72	23 59 27.6	0.4113851	0 17.6	86 16 26.6	1 8 23.8	0.1950
5 34 17.87	24 1 49.5	0.4117034	0 16.6	86 45 59.2	1 9 8.8	0.1953
5 37 14.96	24 3 58.6	0.4120132	0 15.6	87 15 29.2	1 9 53.5	0.1956
5 40 11.96	24 5 55.2	0.4123144	0 14.6	87 44 56.5	1 10 37.7	0.1959
5 43 8.87	24 7 39.1	0.4126072	0 13.6	88 14 21.1	1 11 21.6	0.1962
5 46 5.67	24 9 10.4	0.4128914	0 12.6	88 43 43.2	1 12 5.1	0.1965
5 49 2.37	24 10 29.1	0.4131672	0 11.7	89 13 2.6	1 12 48.2	0.1977
5 51 58.95	24 11 35.3	0.4134345	0 10.7	89 42 19.4	1 13 31.0	0.1979
5 54 55.40	24 12 28.9	0.4136934	0 9.7	90 11 33.6	1 14 13.3	0.1979
5 57 51.72	24 13 10.0	0.4139438	0 8.7	90 40 45.2	1 14 55.3	0.1982
6 0 47.89	24 13 38.6	0.4141858	0 7.7	91 9 54.3	1 15 36.9	0.1985
6 3 43.92	24 13 54.8	0.4144193	0 6.7	91 39 0.9	1 16 18.1	0.1988
6 6 39.79	24 13 58.5	0.4146444	0 5.6	92 8 4.9	1 16 58.9	0.1991
6 9 35.50	24 13 49.9	0.4148611	0 4.6	92 37 6.4	1 17 39.3	0.1994
6 12 31.04	24 13 28.9	0.4150694	0 3.6	93 6 5.5	1 18 19.3	0.1997
6 15 26.41	24 12 55.5	0.4152690	0 2.6	93 35 2.0	1 18 58.9	0.2001
6 18 21.59	24 12 9.9	0.4154601	0 1.5	94 3 56.2	1 19 38.2	0.2004
6 21 16.59	24 11 12.1	0.4156425	{ m 20.5}	94 32 47.9	1 20 17.0	0.2007
6 24 11.38	24 10 2.1	0.4158161	23 58.4	95 1 37.1	1 20 55.5	0.2010
6 27 5.98	24 8 39.9	0.4159809	23 57.3	95 30 24.0	1 21 33.5	0.2013
6 30 0.37	24 7 5.7	0.4161368	23 56.3	95 59 8.5	1 22 11.2	0.2016
6 32 54.55	N. 24 5 19.4	0.4162838	23 55.2	96 27 50.7	N. 1 2	

JUNE, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi-diameter.</i>	<i>Hor. Par.</i>
h m s 5 4 48·03	+ 7·38	0·13	N.23 28 44·7	+ 10·9	1·8	3·4
5 7 45·26	7·38	0·13	23 33 0·4	10·4	1·8	3·4
5 10 42·50	7·38	0·13	23 37 3·4	9·9	1·7	3·3
5 13 39·75	7·38	0·12	23 40 53·7	9·4	1·7	3·3
5 16 37·00	7·38	0·12	23 44 31·3	8·9	1·7	3·3
5 19 34·24	7·38	0·12	23 47 56·3	8·3	1·7	3·3
5 22 31·46	7·38	0·12	23 51 8·6	7·8	1·7	3·3
5 25 28·65	7·38	0·12	23 54 8·8	7·3	1·7	3·3
5 28 25·80	7·38	0·12	23 56 55·2	6·8	1·7	3·3
5 31 22·89	7·38	0·12	23 59 29·4	6·2	1·7	3·3
5 34 19·92	7·37	0·12	24 1 51·0	5·6	1·7	3·3
5 37 16·88	7·37	0·12	24 4 0·0	5·1	1·7	3·3
5 40 13·76	7·37	0·12	24 5 56·3	4·6	1·7	3·3
5 43 10·54	7·36	0·12	24 7 40·0	4·0	1·7	3·3
5 46 7·23	7·36	0·12	24 9 11·1	3·5	1·7	3·3
5 49 3·80	7·35	0·12	24 10 29·7	3·0	1·7	3·3
5 52 0·25	7·35	0·12	24 11 35·7	2·5	1·7	3·3
5 54 56·58	7·34	0·12	24 12 29·2	2·0	1·7	3·3
5 57 52·78	7·34	0·12	24 13 10·2	1·4	1·7	3·3
6 0 48·83	7·33	0·12	24 13 38·7	0·9	1·7	3·3
6 3 44·73	7·33	0·12	24 13 54·9	+ 0·4	1·7	3·3
6 6 40·48	7·32	0·12	24 13 58·5	- 0·1	1·7	3·3
6 9 36·06	7·32	0·12	24 13 49·8	0·6	1·7	3·3
6 12 31·48	7·31	0·12	24 13 28·8	1·1	1·7	3·3
6 15 26·72	7·31	0·12	24 12 55·3	1·7	1·7	3·3
6 18 21·78	7·30	0·12	24 12 9·9	2·2	1·7	3·3
{ 18 18 11·21 }	{ 7·29 }	{ 0·12 }	{ 24 11 13·1 }	{ 2·7 }	{ 1·7 }	{ 3·3 }
6 27 8·79	7·27	0·12	24 8 40·0	3·7	1·7	3·3
6 30 0·06	7·26	0·12	24 7 5·8	4·2	1·7	3·3
6 32 54·11	7·25	0·12	24 5 19·6	4·7	1·7	3·3
6 35 47·33	+ 7·24	0·12	N.24 3 21·5	- 5·2	1·7	3·3

JULY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rel. Vel.
	Noon.	Noon.	Noon.		Noon.	Noon.	Am
	h m s	° ' "		h m	° ' "	° ' "	
1	6 32 54.55	N.24 5 19.4	0.4162838	23 55.2	96 27 50.7	N.1 22 48.4	0.2019
2	6 35 48.50	24 3 21.1	.4164216	23 54.2	96 56 30.5	1 23 25.3	.2022
3	6 38 42.22	24 1 10.9	.4165504	23 53.2	97 25 8.0	1 24 1.7	.2025
4	6 41 35.70	23 58 48.8	.4166699	23 52.2	97 53 43.2	1 24 37.8	.2028
5	6 44 28.93	23 56 14.9	.4167801	23 51.1	98 22 16.1	1 25 13.5	.2031
6	6 47 21.91	23 53 29.3	.4168810	23 50.1	98 50 46.8	1 25 48.8	.2033
7	6 50 14.62	23 50 32.0	.4169725	23 49.0	99 19 15.2	1 26 23.6	.2035
8	6 53 7.05	23 47 23.1	.4170545	23 48.0	99 47 41.4	1 26 58.1	.2037
9	6 55 59.21	23 44 2.7	.4171270	23 46.9	100 16 5.3	1 27 32.2	.2039
10	6 58 51.07	23 40 30.9	.4171900	23 45.8	100 44 27.1	1 28 5.9	.2041
11	7 1 42.63	23 36 47.7	.4172433	23 44.7	101 12 46.7	1 28 39.2	.2043
12	7 4 33.88	23 32 53.2	.4172871	23 43.6	101 41 4.1	1 29 12.0	.2045
13	7 7 24.83	23 28 47.5	.4173213	23 42.5	102 9 19.4	1 29 44.5	.2047
14	7 10 15.45	23 24 30.6	.4173459	23 41.4	102 37 32.5	1 30 16.6	.2049
15	7 13 5.75	23 20 2.7	.4173611	23 40.3	103 5 43.6	1 30 48.2	.2051
16	7 15 55.72	23 15 23.9	.4173667	23 39.2	103 33 52.5	1 31 19.5	.2053
17	7 18 45.34	23 10 34.2	.4173629	23 38.1	104 1 59.4	1 31 50.3	.2054
18	7 21 34.62	23 5 33.7	.4173496	23 37.0	104 30 4.2	1 32 20.8	.2056
19	7 24 23.56	23 0 22.5	.4173268	23 35.9	104 58 6.9	1 32 50.8	.2057
20	7 27 12.15	22 55 0.7	.4172945	23 34.7	105 26 7.7	1 33 20.4	.2058
21	7 30 0.39	22 49 28.3	.4172527	23 33.6	105 54 6.4	1 33 49.7	.2059
22	7 32 48.28	22 43 45.5	.4172013	23 32.4	106 22 3.2	1 34 18.5	.2060
23	7 35 35.81	22 37 52.3	.4171405	23 31.3	106 49 58.0	1 34 46.9	.2061
24	7 38 22.99	22 31 48.7	.4170700	23 30.1	107 17 50.8	1 35 14.9	.2062
25	7 41 9.80	22 25 35.0	.4169898	23 28.9	107 45 41.7	1 35 42.5	.2063
26	7 43 56.25	22 19 11.1	.4168999	23 27.7	108 13 30.7	1 36 9.6	.2064
27	7 46 42.33	22 12 37.2	.4168002	23 26.5	108 41 17.9	1 36 36.4	.2065
28	7 49 28.05	22 5 53.4	.4166905	23 25.3	109 9 3.1	1 37 2.8	.2066
29	7 52 13.40	21 58 59.7	.4165709	23 24.1	109 36 46.5	1 37 28.8	.2067
30	7 54 58.37	21 51 56.3	.4164411	23 22.9	110 4 28.0	1 37 54.3	.2068
31	7 57 42.97	21 44 43.2	.4163012	23 21.7	110 32 7.8	1 38 19.5	.2069
32	8 0 27.18	N.21 37 20.5	0.4161510	23 20.5	110 59 45.7	N.1 38 44.3	

MARS.

JULY, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi- diameter.</i>
6 ^h 35 ^m 47 ^s ·93	+ 7 [·] 24	0 [·] 12	N.24° 3' 21 [·] 5	— 5 [·] 2	1 [·] 7
6 38 41 [·] 53	7 [·] 23	0 [·] 12	24 1 11 [·] 4	5 [·] 7	1 [·] 7
6 41 34 [·] 89	7 [·] 22	0 [·] 12	23 58 49 [·] 5	6 [·] 2	1 [·] 7
6 44 27 [·] 99	7 [·] 21	0 [·] 12	23 56 15 [·] 7	6 [·] 7	1 [·] 7
6 47 20 [·] 84	7 [·] 20	0 [·] 12	23 53 30 [·] 3	7 [·] 2	1 [·] 7
6 50 13 [·] 43	7 [·] 19	0 [·] 12	23 50 33 [·] 2	7 [·] 6	1 [·] 7
6 53 5 [·] 74	7 [·] 18	0 [·] 12	23 47 24 [·] 6	8 [·] 1	1 [·] 7
6 55 57 [·] 76	7 [·] 17	0 [·] 12	23 44 4 [·] 5	8 [·] 6	1 [·] 7
6 58 49 [·] 50	7 [·] 16	0 [·] 12	23 40 32 [·] 9	9 [·] 1	1 [·] 7
7 1 40 [·] 94	7 [·] 14	0 [·] 12	23 36 50 [·] 0	9 [·] 6	1 [·] 7
7 4 32 [·] 07	7 [·] 12	0 [·] 12	23 32 55 [·] 8	10 [·] 0	1 [·] 7
7 7 22 [·] 88	7 [·] 11	0 [·] 12	23 28 50 [·] 3	10 [·] 5	1 [·] 7
7 10 13 [·] 38	7 [·] 09	0 [·] 12	23 24 33 [·] 8	11 [·] 0	1 [·] 7
7 13 3 [·] 56	7 [·] 08	0 [·] 12	23 20 6 [·] 3	11 [·] 4	1 [·] 7
7 15 53 [·] 40	7 [·] 06	0 [·] 12	23 15 27 [·] 8	11 [·] 9	1 [·] 7
7 18 42 [·] 89	7 [·] 05	0 [·] 12	23 10 38 [·] 5	12 [·] 3	1 [·] 7
7 21 32 [·] 04	7 [·] 03	0 [·] 12	23 5 38 [·] 4	12 [·] 8	1 [·] 7
7 24 20 [·] 85	7 [·] 02	0 [·] 12	23 0 27 [·] 6	13 [·] 2	1 [·] 7
7 27 9 [·] 32	7 [·] 00	0 [·] 12	22 55 6 [·] 2	13 [·] 7	1 [·] 7
7 29 57 [·] 43	6 [·] 99	0 [·] 12	22 49 34 [·] 3	14 [·] 1	1 [·] 7
7 32 45 [·] 20	6 [·] 98	0 [·] 12	22 43 51 [·] 9	14 [·] 5	1 [·] 7
7 35 32 [·] 60	6 [·] 96	0 [·] 12	22 37 59 [·] 2	15 [·] 0	1 [·] 7
7 38 19 [·] 65	6 [·] 95	0 [·] 12	22 31 56 [·] 1	15 [·] 4	1 [·] 7
7 41 6 [·] 33	6 [·] 93	0 [·] 12	22 25 42 [·] 9	15 [·] 8	1 [·] 7
7 43 52 [·] 65	6 [·] 92	0 [·] 12	22 19 19 [·] 6	16 [·] 2	1 [·] 7
7 46 38 [·] 61	6 [·] 90	0 [·] 12	22 12 46 [·] 2	16 [·] 6	1 [·] 7
7 49 24 [·] 20	6 [·] 89	0 [·] 12	22 6 2 [·] 9	17 [·] 0	1 [·] 7
7 52 9 [·] 42	6 [·] 87	0 [·] 12	21 59 9 [·] 8	17 [·] 4	1 [·] 7
7 54 54 [·] 27	6 [·] 86	0 [·] 12	21 52 6 [·] 9	17 [·] 8	1 [·] 7
7 57 39 [·] 84	6 [·] 84	0 [·] 12	21 44 54 [·] 4	18 [·] 2	1 [·] 7
8 0 [·] 4	6 [·] 83	0 [·] 12	21 37 32 [·] 4	18 [·] 6	1 [·] 7
8 3			N.21 30 1 [·] 0	—19 [·] 0	1 [·] 7

AUGUST, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Ec. D.
	Noon.	Noon.	Noon.		Noon.	Noon.	No.
	^h ^m ^s	[°] ['] ["]		^h ^m	[°] ['] ["]	[°] ['] ["]	
1	8 0 27.18	N.21 37.20.50	*4161510	23 20.5	110 59 45.7	N.1 38 44.3	0.21.7
2	8 3 11.01	21 29 48.4	*4159904	23 19.3	111 27 21.9	1 39 8.6	*21.3
3	8 5 54.46	21 22 7.0	*4158193	23 18.1	111 54 56.3	1 39 32.6	*21.0
4	8 8 37.51	21 14 16.3	*4156376	23 16.9	112 22 29.0	1 39 56.1	*21.0
5	8 11 20.17	21 6 16.5	*4154452	23 15.7	112 49 59.9	1 40 19.2	*21.7
6	8 14 2.44	20 58 7.7	*4152423	23 14.5	113 17 29.2	1 40 41.9	*21.1
7	8 16 44.30	20 49 50.0	*4150387	23 13.2	113 44 56.8	1 41 4.2	*21.1
8	8 19 25.77	20 41 23.4	*4148044	23 11.9	114 12 22.7	1 41 26.1	*21.7
9	8 22 6.83	20 32 48.2	*4145694	23 10.6	114 39 46.9	1 41 47.6	*21.3
10	8 24 47.49	20 24 4.4	*4143237	23 9.4	115 7 9.5	1 42 8.7	*21.2
11	8 27 27.74	20 15 12.0	*4140672	23 8.1	115 34 30.6	1 42 29.3	*21.3
12	8 30 7.58	20 6 11.4	*4138001	23 6.8	116 1 50.0	1 42 49.6	*21.3
13	8 32 47.01	19 57 2.4	*4135223	23 5.5	116 29 7.9	1 43 9.4	*21.3
14	8 35 26.04	19 47 45.3	*4132337	23 4.2	116 56 24.2	1 43 28.8	*21.3
15	8 38 4.65	19 38 20.2	*4129344	23 2.9	117 23 38.9	1 43 47.8	*21.3
16	8 40 42.85	19 28 47.2	*4126244	23 1.6	117 50 32.2	1 44 6.4	*21.3
17	8 43 20.64	19 19 6.3	*4123037	23 0.3	118 18 4.0	1 44 24.6	*21.3
18	8 45 58.03	19 9 17.7	*4119723	22 59.0	118 45 14.3	1 44 42.4	*21.3
19	8 48 35.01	18 59 21.4	*4116300	22 57.6	119 12 23.1	1 44 59.8	*21.3
20	8 51 11.59	18 49 17.6	*4112770	22 56.3	119 39 30.5	1 45 16.8	*21.3
21	8 53 47.77	18 39 6.4	*4109131	22 54.9	120 6 36.5	1 45 33.4	*21.3
22	8 56 23.56	18 28 47.8	*4105384	22 53.6	120 33 41.1	1 45 49.6	*21.3
23	8 58 58.95	18 18 22.0	*4101527	22 52.3	121 0 44.3	1 46 5.4	*21.3
24	9 1 33.95	18 7 49.0	*4097560	22 50.9	121 27 46.1	1 46 20.8	*21.3
25	9 4 8.56	17 57 9.0	*4093481	22 49.5	121 54 46.6	1 46 35.7	*21.3
26	9 6 42.79	17 46 22.0	*4089290	22 48.1	122 21 45.7	1 46 50.3	*21.3
27	9 9 16.63	17 35 28.2	*4084985	22 46.7	122 48 43.5	1 47 4.5	*21.3
28	9 11 50.09	17 24 27.6	*4080366	22 45.3	123 15 40.1	1 47 18.2	*21.3
29	9 14 23.18	17 13 20.4	*4076032	22 43.9	123 42 35.3	1 47 31.6	*21.3
30	9 16 55.88	17 2 6.7	*4071381	22 42.5	124 9 29.3	1 47 44.5	*21.3
31	9 19 28.20	16 50 46.6	*4066614	22 41.1	124 36 22.1	1 47 57.1	
32	9 22 0.15	N.16 39 20.2	*4061728	22 39.7	125 3 13.6		

AUGUST, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi-diameter.</i>	<i>Hor. Par.</i>
<small>h m s</small>	<small>+ s</small>	<small>s</small>	<small>o ' "</small>	<small>" "</small>	<small>" "</small>	<small>" "</small>
8 3 6.53	+ 6.81	0.12	N.21 30 1.0	-19.0	1.7	3.
8 5 49.85	6.79	0.12	21 29 20.2	19.4	1.7	3.
8 8 32.78	6.78	0.12	21 14 30.1	19.8	1.7	3.
8 11 15.32	6.76	0.12	21 6 31.0	20.2	1.7	3.
8 13 57.45	6.75	0.12	20 58 22.9	20.6	1.7	3.
8 16 39.19	6.73	0.12	20 50 5.9	20.9	1.7	3.
8 19 20.52	6.72	0.12	20 41 40.0	21.3	1.7	3.
8 22 1.46	6.70	0.12	20 32 5.5	21.7	1.7	3.
8 24 41.99	6.69	0.12	20 24 22.5	22.0	1.7	3.
8 27 22.11	6.67	0.12	20 15 30.9	22.4	1.7	3.
8 30 1.82	6.65	0.12	20 6 31.0	22.7	1.7	3.
8 32 41.13	6.64	0.12	19 57 22.8	23.0	1.7	3.
8 35 20.03	6.62	0.12	19 48 6.5	23.4	1.7	3.
8 37 58.52	6.61	0.12	19 38 42.1	23.7	1.7	3.
8 40 36.59	6.59	0.12	19 29 10.0	24.0	1.7	3.
8 43 14.25	6.58	0.12	19 19 29.9	24.3	1.7	3.
8 45 51.51	6.56	0.12	19 9 42.2	24.7	1.7	3.
8 48 28.37	6.54	0.12	18 59 46.8	25.0	1.7	3.
8 51 4.82	6.52	0.12	18 49 43.9	25.3	1.7	3.
8 53 40.87	6.50	0.12	18 39 33.5	25.6	1.7	3.
8 56 16.53	6.48	0.12	18 29 15.9	25.9	1.7	3.
8 58 51.79	6.47	0.12	18 18 51.0	26.2	1.7	3.
9 1 26.66	6.45	0.12	18 8 19.0	26.5	1.7	3.
9 4 1.15	6.43	0.12	17 57 39.9	26.8	1.7	3.
9 6 35.24	6.42	0.12	17 46 53.9	27.1	1.7	3.
9 9 8.96	6.40	0.12	17 36 1.1	27.3	1.7	3.
9 11 42.29	6.39	0.12	17 25 1.4	27.6	1.7	3.
9 14 15.25	6.37	0.12	17 13 55.2	27.9	1.8	3.
9 16 47.82	6.36	0.12	17 2 42.5	28.2	1.8	3.
9 19 20.02	6.34	0.12	16 51 23.4	28.5	1.8	3.
9 21 51.84	6.32	0.12	16 39 58.0	28.7	1.8	3.
9 24 22. —	+ 6.30	0.12	N.16 28 26.5	-28.0	1.8	3.

SEPTEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad.
	Noon.	Noon.	Noon.		Noon.	Noon.	No.
	h m s	° ' "		h m	° ' "	° ' "	
1	9 22 0.15	N.16 39 20.2	0.4061728	22 39.7	125 3 13.6	N.1 48 9.2	0.2151
2	9 24 31.72	16 27 47.7	.4056723	22 38.3	125 30 3.9	1 48 20.9	.2152
3	9 27 2.92	16 16 9.1	.4051598	22 36.9	125 56 53.0	1 48 32.2	.2153
4	9 29 33.74	16 4 24.6	.4046352	22 35.5	126 23 40.9	1 48 43.1	.2154
5	9 32 4.19	15 52 34.3	.4040986	22 34.1	126 50 27.7	1 48 53.6	.2155
6	9 34 34.27	15 40 38.2	.4035499	22 32.7	127 17 13.4	1 49 3.7	.2156
7	9 37 3.98	15 28 36.6	.4029890	22 31.2	127 43 57.9	1 49 13.4	.2157
8	9 39 33.33	15 16 29.5	.4024161	22 29.7	128 10 41.4	1 49 22.7	.2158
9	9 42 2.30	15 4 17.1	.4018309	22 28.3	128 37 23.8	1 49 31.6	.2159
10	9 44 30.92	14 51 59.3	.4012335	22 26.8	129 4 5.1	1 49 40.0	.2160
11	9 46 59.17	14 39 36.5	.4006240	22 25.3	129 30 45.4	1 49 48.1	.2161
12	9 49 27.06	14 27 8.6	.4000023	22 23.8	129 57 24.7	1 49 55.8	.2162
13	9 51 54.61	14 14 35.7	.3993685	22 22.3	130 24 3.1	1 50 3.1	.2163
14	9 54 21.81	14 1 58.0	.3987225	22 20.8	130 50 40.4	1 50 9.9	.2164
15	9 56 48.66	13 49 15.5	.3980645	22 19.3	131 17 16.8	1 50 16.4	.2165
16	9 59 15.18	13 36 28.4	.3973943	22 17.8	131 43 52.3	1 50 22.4	.2166
17	10 1 41.36	13 23 36.8	.3967119	22 16.3	132 10 26.9	1 50 28.1	.2167
18	10 4 7.21	13 10 40.6	.3960171	22 14.8	132 37 0.6	1 50 33.3	.2168
19	10 6 32.75	12 57 40.1	.3953100	22 13.3	133 3 33.4	1 50 38.2	.2169
20	10 8 57.97	12 44 35.3	.3945905	22 11.7	133 30 5.3	1 50 42.7	.2170
21	10 11 22.88	12 31 26.3	.3938585	22 10.2	133 56 36.5	1 50 46.7	.2171
22	10 13 47.48	12 18 13.2	.3931138	22 8.7	134 23 6.7	1 50 50.4	.2172
23	10 16 11.78	12 4 56.2	.3923564	22 7.2	134 49 36.2	1 50 53.7	.2173
24	10 18 35.78	11 51 35.2	.3915862	22 5.7	135 16 4.9	1 50 56.6	.2174
25	10 20 59.49	11 38 10.5	.3908031	22 4.1	135 42 32.8	1 50 59.1	.2175
26	10 23 22.92	11 24 42.0	.3900070	22 2.5	136 9 0.0	1 51 1.2	.2176
27	10 25 46.07	11 11 9.9	.3891978	22 1.0	136 35 26.4	1 51 2.9	.2177
28	10 28 8.93	10 57 34.4	.3883753	21 59.4	137 1 52.1	1 51 4.3	.2178
29	10 30 31.52	10 43 55.4	.3875395	21 57.8	137 28 1.1		
30	10 32 53.84	10 30 13.2	.3866902	21 56.2	137 54		
31	10 35 15.88	N.10 16 27.9	0.3858275	21 54.6			

SEPTEMBER, 1842.

At Transit over the Meridian of Greenwich.

<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi- diameter.</i>	<i>Hor. Par.</i>
<i>h m s</i>	<i>°</i>	<i>°</i>	<i>° ′ ″</i>	<i>″</i>	<i>″</i>	<i>″</i>
9 24 23.28	+ 6.30	0.12	N.16 28 26.5	-28.9	1.8	3.4
9 26 54.35	6.29	0.12	16 16 48.9	29.2	1.8	3.4
9 29 25.04	6.27	0.12	16 5 5.4	29.4	1.8	3.4
9 31 55.37	6.26	0.12	15 53 16.2	29.7	1.8	3.4
9 34 25.32	6.24	0.12	15 41 21.2	29.9	1.8	3.4
9 36 54.90	6.23	0.12	15 29 20.7	30.1	1.8	3.4
9 39 24.12	6.21	0.12	15 17 14.6	30.4	1.8	3.4
9 41 52.96	6.20	0.12	15 5 3.2	30.6	1.8	3.4
9 44 21.45	6.18	0.12	14 52 46.6	30.8	1.8	3.4
9 46 49.57	6.17	0.12	14 40 24.9	31.0	1.8	3.4
9 49 17.34	6.15	0.12	14 27 58.0	31.2	1.8	3.4
9 51 44.75	6.14	0.12	14 15 26.3	31.4	1.8	3.4
9 54 11.83	6.12	0.12	14 2 49.6	31.6	1.8	3.4
9 56 38.55	6.11	0.12	13 50 8.3	31.8	1.8	3.4
9 59 4.94	6.09	0.12	13 37 22.3	32.0	1.8	3.4
10 1 30.99	6.08	0.12	13 24 31.7	32.2	1.8	3.4
10 3 56.71	6.06	0.12	13 11 36.7	32.4	1.8	3.4
10 6 22.12	6.05	0.12	12 58 37.3	32.6	1.8	3.4
10 8 47.21	6.03	0.12	12 45 33.6	32.8	1.8	3.5
10 11 11.99	6.02	0.12	12 32 25.7	33.0	1.8	3.5
10 13 36.46	6.01	0.12	12 19 13.8	33.1	1.8	3.5
10 16 0.62	6.00	0.12	12 5 57.9	33.3	1.8	3.5
10 18 24.50	5.98	0.12	11 52 38.1	33.5	1.8	3.5
10 20 48.08	5.97	0.12	11 39 14.6	33.7	1.8	3.5
10 23 11.37	5.96	0.12	11 25 47.3	33.8	1.8	3.5
10 25 34.39	5.95	0.12	11 12 16.3	33.9	1.8	3.5
10 27 57.12	5.94	0.12	10 58 41.9	34.1	1.8	3.5
10 30 19.58	5.93	0.12	10 45 4.2	34.2	1.8	3.5
10 32 41.76	5.92	0.12	10 31 23.1	34.3	1.8	3.5
10 35 3.67	5.91	0.12	10 17 39.0	34.4	1.8	3.5
10 38 25.58	5.90	0.12	N.10 3 51.7	-34.5	1.8	3.5

OCTOBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Rad. Dist.
	Noon.	Noon.	Noon.		Noon.	Noon.	Num.
1	10 35 15 ^{h m s} .88	N. 10 16 27 ^{o / ' / "} .90	0.3858275	21 54 ^{h m} .6	138 21 5 ^{o / ' / "} .1	N. 1 51 5 ^{o / ' / "} .9	0.22013
2	10 37 37 ^{h m s} .66	10 2 39 ^{o / ' / "} .5	.3849510	21 53 ^{h m} .0	138 47 28 ^{o / ' / "} .2	1 51 5 ^{o / ' / "} .7	.22014
3	10 39 59 ^{h m s} .17	9 48 48 ^{o / ' / "} .2	.3840607	21 51 ^{h m} .4	139 13 50 ^{o / ' / "} .6	1 51 5 ^{o / ' / "} .1	.22015
4	10 42 20 ^{h m s} .42	9 34 54 ^{o / ' / "} .1	.3831566	21 49 ^{h m} .8	139 40 12 ^{o / ' / "} .4	1 51 4 ^{o / ' / "} .1	.22016
5	10 44 41 ^{h m s} .41	9 20 57 ^{o / ' / "} .3	.3822388	21 48 ^{h m} .2	140 6 33 ^{o / ' / "} .7	1 51 2 ^{o / ' / "} .7	.22017
6	10 47 2 ^{h m s} .15	9 6 57 ^{o / ' / "} .9	.3813072	21 46 ^{h m} .6	140 32 54 ^{o / ' / "} .3	1 51 0 ^{o / ' / "} .9	.22018
7	10 49 22 ^{h m s} .63	8 52 56 ^{o / ' / "} .0	.3803618	21 45 ^{h m} .0	140 59 14 ^{o / ' / "} .5	1 50 58 ^{o / ' / "} .8	.22019
8	10 51 42 ^{h m s} .86	8 38 51 ^{o / ' / "} .7	.3794027	21 43 ^{h m} .4	141 25 34 ^{o / ' / "} .1	1 50 56 ^{o / ' / "} .2	.22020
9	10 54 2 ^{h m s} .85	8 24 45 ^{o / ' / "} .1	.3784299	21 41 ^{h m} .8	141 51 53 ^{o / ' / "} .2	1 50 53 ^{o / ' / "} .2	.22021
10	10 56 22 ^{h m s} .60	8 10 36 ^{o / ' / "} .3	.3774433	21 40 ^{h m} .2	142 18 11 ^{o / ' / "} .9	1 50 49 ^{o / ' / "} .9	.22022
11	10 58 42 ^{h m s} .12	7 56 25 ^{o / ' / "} .3	.3764429	21 38 ^{h m} .6	142 44 30 ^{o / ' / "} .1	1 50 46 ^{o / ' / "} .1	.22023
12	11 1 1 ^{h m s} .40	7 42 12 ^{o / ' / "} .3	.3754286	21 37 ^{h m} .0	143 10 47 ^{o / ' / "} .8	1 50 42 ^{o / ' / "} .0	.22024
13	11 3 20 ^{h m s} .46	7 27 57 ^{o / ' / "} .4	.3744005	21 35 ^{h m} .4	143 37 5 ^{o / ' / "} .2	1 50 37 ^{o / ' / "} .4	.22025
14	11 5 39 ^{h m s} .30	7 13 40 ^{o / ' / "} .7	.3733584	21 33 ^{h m} .7	144 3 22 ^{o / ' / "} .1	1 50 32 ^{o / ' / "} .5	.22026
15	11 7 57 ^{h m s} .92	6 59 22 ^{o / ' / "} .2	.3723024	21 32 ^{h m} .1	144 29 38 ^{o / ' / "} .6	1 50 27 ^{o / ' / "} .2	.22027
16	11 10 16 ^{h m s} .34	6 45 2 ^{o / ' / "} .1	.3712324	21 30 ^{h m} .5	144 55 54 ^{o / ' / "} .7	1 50 21 ^{o / ' / "} .5	.22028
17	11 12 34 ^{h m s} .55	6 30 40 ^{o / ' / "} .3	.3701483	21 28 ^{h m} .9	145 22 10 ^{o / ' / "} .5	1 50 15 ^{o / ' / "} .4	.22029
18	11 14 52 ^{h m s} .57	6 16 17 ^{o / ' / "} .1	.3690500	21 27 ^{h m} .3	145 48 26 ^{o / ' / "} .0	1 50 9 ^{o / ' / "} .0	.22030
19	11 17 10 ^{h m s} .39	6 1 52 ^{o / ' / "} .4	.3679375	21 25 ^{h m} .6	146 14 41 ^{o / ' / "} .1	1 50 2 ^{o / ' / "} .1	.22031
20	11 19 28 ^{h m s} .03	5 47 26 ^{o / ' / "} .4	.3668107	21 23 ^{h m} .9	146 40 55 ^{o / ' / "} .9	1 49 54 ^{o / ' / "} .9	.22032
21	11 21 45 ^{h m s} .49	5 32 59 ^{o / ' / "} .1	.3656696	21 22 ^{h m} .3	147 7 10 ^{o / ' / "} .4	1 49 47 ^{o / ' / "} .3	.22033
22	11 24 2 ^{h m s} .79	5 18 30 ^{o / ' / "} .7	.3645140	21 20 ^{h m} .7	147 33 24 ^{o / ' / "} .7	1 49 39 ^{o / ' / "} .3	.22034
23	11 26 19 ^{h m s} .91	5 4 1 ^{o / ' / "} .2	.3633437	21 19 ^{h m} .0	147 59 38 ^{o / ' / "} .7	1 49 31 ^{o / ' / "} .0	.22035
24	11 28 36 ^{h m s} .87	4 49 30 ^{o / ' / "} .8	.3621587	21 17 ^{h m} .3	148 25 52 ^{o / ' / "} .5	1 49 22 ^{o / ' / "} .3	.22036
25	11 30 53 ^{h m s} .67	4 34 59 ^{o / ' / "} .5	.3609588	21 15 ^{h m} .6	148 52 6 ^{o / ' / "} .1	1 49 13 ^{o / ' / "} .1	.22037
26	11 33 10 ^{h m s} .31	4 20 27 ^{o / ' / "} .4	.3597439	21 13 ^{h m} .9	149 18 19 ^{o / ' / "} .4	1 49 3 ^{o / ' / "} .7	.22038
27	11 35 26 ^{h m s} .81	4 5 54 ^{o / ' / "} .6	.3585138	21 12 ^{h m} .3	149 44 32 ^{o / ' / "} .7	1 48 53 ^{o / ' / "} .8	.22039
28	11 37 43 ^{h m s} .16	3 51 21 ^{o / ' / "} .2	.3572685	21 10 ^{h m} .7	150 10		
29	11 39 59 ^{h m s} .36	3 36 47 ^{o / ' / "} .4	.3560078	21 9 ^{h m} .0	150 36		
30	11 42 15 ^{h m s} .42	3 22 13 ^{o / ' / "} .2	.3547317	21 7 ^{h m} .3			
31	11 44 31 ^{h m s} .34	3 7 38 ^{o / ' / "} .8	.3534400	21 5 ^{h m} .6			
32	11 46 47 ^{h m s} .12	N. 2 53 4 ^{o / ' / "} .2	0.3521328	21 3 ^{h m} .9			

OCTOBER, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
^h 10 ^m 37 ^s 25·32	+ 5·90	0·12	N. 10° 3' 51·7"	- 34·5	1·8	3·5
10 39 46·70	5·88	0·12	9 50 1·6	34·6	1·8	3·5
10 42 7·82	5·87	0·12	9 36 8·7	34·8	1·8	3·5
10 44 28·67	5·86	0·13	9 22 13·0	34·9	1·9	3·6
10 46 49·28	5·85	0·13	9 8 14·8	35·0	1·9	3·6
10 49 9·63	5·84	0·13	8 54 14·1	35·1	1·9	3·6
10 51 29·73	5·83	0·13	8 40 10·9	35·2	1·9	3·6
10 53 49·58	5·82	0·13	8 26 5·5	35·3	1·9	3·6
10 56 9·20	5·81	0·13	8 11 57·8	35·4	1·9	3·6
10 58 28·58	5·80	0·13	7 57 48·0	35·5	1·9	3·6
11 0 47·73	5·79	0·13	7 43 36·2	35·5	1·9	3·6
11 3 6·65	5·78	0·13	7 29 22·5	35·6	1·9	3·6
11 5 25·36	5·77	0·13	7 15 6·9	35·7	1·9	3·6
11 7 43·84	5·76	0·13	7 0 49·5	35·8	1·9	3·6
11 10 2·12	5·75	0·13	6 46 30·5	35·9	1·9	3·6
11 12 20·20	5·74	0·13	6 32 9·9	35·9	1·9	3·6
11 14 38·08	5·73	0·13	6 17 47·8	36·0	1·9	3·7
11 16 55·77	5·72	0·13	6 3 24·2	36·1	1·9	3·7
11 19 13·28	5·72	0·13	5 48 59·4	36·1	1·9	3·7
11 21 30·60	5·71	0·13	5 34 33·2	36·2	1·9	3·7
11 23 47·75	5·71	0·13	5 20 5·9	36·2	1·9	3·7
11 26 4·73	5·70	0·13	5 5 37·6	36·2	1·9	3·7
11 28 21·55	5·69	0·13	4 51 8·2	36·2	1·9	3·7
11 30 38·21	5·69	0·13	4 36 38·0	36·3	1·9	3·7
11 32 54·71	5·68	0·13	4 22 7·0	36·3	1·9	3·7
11 35 11·07	5·68	0·13	4 7 35·3	36·3	2·0	3·8
11 37 27·28	5·67	0·13	3 53 3·0	36·4	2·0	3·8
11 39 43·34	5·66	0·13	3 38 30·2	36·4	2·0	3·8
11 41 59·26	5·66	0·13	3 23 57·1	36·4	2·0	3·8
11 44 15·11	5·65	0·13	3 9 23·7	36·4	2·0	3·8
1 1 31·55	5·65	0·13	2 54 50·1	36·4	2·0	3·8
		0·13	N. 2 40 16·6	- 36·4	2·0	3·8

NOVEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Long. Red. N.
	h m s	° ' "		h m s	° ' "	° ' "	
	Noon.	Noon.	Noon.	Noon.	Noon.	Noon.	Noon.
1	11 46 47.12	N. 2 53 4.2	0.3521328	21 3.9	151 55 36.8	N. 1 47 58.8	0.2217
2	11 49 2.76	2 38 29.6	.3508098	21 2.2	152 21 49.4	1 47 46.7	.2217
3	11 51 18.28	2 23 55.1	.3494710	21 0.5	152 48 1.9	1 47 34.2	.2217
4	11 53 33.66	2 9 20.7	.3481166	20 58.8	153 14 14.5	1 47 21.3	.2217
5	11 55 48.91	1 54 46.6	.3467464	20 57.1	153 40 27.0	1 47 8.0	.2217
6	11 58 4.04	1 40 12.8	.3453605	20 55.4	154 6 39.5	1 46 54.4	.2217
7	12 0 19.04	1 25 39.4	.3439587	20 53.7	154 32 52.1	1 46 40.4	.2217
8	12 2 33.93	1 11 6.6	.3425412	20 52.0	154 59 4.7	1 46 26.0	.2217
9	12 4 48.70	0 56 34.3	.3411079	20 50.3	155 25 17.4	1 46 11.3	.2217
10	12 7 3.37	0 42 2.8	.3396588	20 48.6	155 51 30.2	1 45 56.1	.2217
11	12 9 17.93	0 27 32.0	.3381938	20 46.9	156 17 43.1	1 45 40.6	.2217
12	12 11 32.39	N. 0 13 2.1	.3367129	20 45.2	156 43 56.1	1 45 24.8	.2217
13	12 13 46.75	S. 0 1 26.9	.3352160	20 43.5	157 10 9.3	1 45 8.5	.2217
14	12 16 1.02	0 15 54.9	.3337033	20 41.8	157 36 22.6	1 44 51.9	.2217
15	12 18 15.21	0 30 21.8	.3321744	20 40.1	158 2 36.1	1 44 34.9	.2217
16	12 20 29.32	0 44 47.6	.3306295	20 38.4	158 28 49.9	1 44 17.5	.2217
17	12 22 43.35	0 59 12.1	.3290682	20 36.7	158 55 3.8	1 43 59.8	.2217
18	12 24 57.31	1 13 35.3	.3274906	20 35.0	159 21 18.0	1 43 41.6	.2217
19	12 27 11.21	1 27 57.1	.3258965	20 33.3	159 47 32.4	1 43 23.2	.2217
20	12 29 25.05	1 42 17.5	.3242859	20 31.6	160 13 47.1	1 43 4.3	.2217
21	12 31 38.83	1 56 36.3	.3226585	20 29.9	160 40 2.2	1 42 45.1	.2217
22	12 33 52.56	2 10 53.4	.3210142	20 28.2	161 6 17.5	1 42 25.6	.2217
23	12 36 6.23	2 25 8.7	.3193529	20 26.5	161 32 33.2	1 42 5.6	.2217
24	12 38 19.85	2 39 22.2	.3176744	20 24.8	161 58 49.2	1 41 45.4	.2217
25	12 40 33.42	2 53 33.8	.3159786	20 23.0	162 25 5.6	1 41 24.7	.2217
26	12 42 46.95	3 7 43.3	.3142652	20 21.3	162 51 22.4	1 41 3.7	.2217
27	12 45 0.43	3 21 50.6	.3125343	20 19.6	163 17 39.6	1 40 42.4	.2217
28	12 47 13.86	3 35 55.7	.3107857	20 17.9	163 43 6.7	1 39 51.7	.2217
29	12 49 27.25	3 49 58.4	.3090194	20 16.2	164 9 16.0	1 39 0.0	.2217
30	12 51 40.59	4 3 58.7	.3072354	20 14.5	164 35 25.3	1 38 8.3	.2217
31	12 53 53.88	S. 4 17 56.5	0.3054334	20 12.8	165 1 34.6	1 37 16.6	.2217

NOVEMBER, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
^h 11 ^m 48 ^s 46·18	+ 5·64	0·13	N. 2 40 16·6	- 36·4	2·0	3·8
11 51 1·55	5·63	0·13	2 25 43·1	36·4	2·0	3·8
11 53 16·79	5·63	0·14	2 11 9·7	36·4	2·0	3·8
11 55 31·90	5·62	0·14	1 56 36·6	36·4	2·0	3·8
11 57 46·89	5·62	0·14	1 42 3·7	36·4	2·0	3·9
12 0 1·75	5·61	0·14	1 27 31·3	36·3	2·0	3·9
12 2 16·49	5·61	0·14	1 12 59·5	36·3	2·0	3·9
12 4 31·11	5·60	0·14	0 58 28·2	36·3	2·0	3·9
12 6 45·63	5·60	0·14	0 43 57·6	36·3	2·0	3·9
12 9 0·05	5·59	0·14	0 29 27·7	36·2	2·0	3·9
12 11 14·36	5·59	0·14	0 14 58·7	36·2	2·0	3·9
12 13 28·58	5·59	0·14	N. 0 0 30·5	36·2	2·1	4·0
12 15 42·70	5·58	0·14	S. 0 13 56·6	36·1	2·1	4·0
12 17 56·74	5·58	0·14	0 28 22·6	36·1	2·1	4·0
12 20 10·70	5·57	0·14	0 42 47·5	36·1	2·1	4·0
12 22 24·58	5·57	0·14	0 57 11·2	36·0	2·1	4·0
12 24 38·40	5·57	0·14	1 11 33·5	36·0	2·1	4·0
12 26 52·15	5·57	0·14	1 25 54·5	35·9	2·1	4·0
12 29 5·84	5·56	0·14	1 40 14·1	35·8	2·1	4·1
12 31 19·47	5·56	0·14	1 54 32·0	35·7	2·1	4·1
12 33 33·04	5·56	0·14	2 8 48·4	35·6	2·1	4·1
12 35 46·56	5·56	0·14	2 23 3·0	35·6	2·1	4·1
12 38 0·03	5·56	0·14	2 37 15·8	35·5	2·1	4·1
12 40 13·45	5·55	0·14	2 51 26·6	35·4	2·1	4·1
12 42 26·83	5·55	0·14	3 5 35·4	35·3	2·1	4·1
12 44 40·15	5·55	0·14	3 19 42·1	35·2	2·2	4·2
12 46 53·44	5·55	0·14	3 33 46·5	35·1	2·2	4·2
12 49 6·67	5·55	0·14	3 47 48·6	35·0	2·2	4·2
12 51 19·86	5·55	0·14	4 1 48·3	34·9	2·2	4·2
12 53 33·00	5·55	0·14	4 15 45·5	34·8	2·2	4·2
12 55 46·14	5·54	0·15	S. 4 29 40·0	- 34·7	2·2	4·2

DECEMBER, 1842.

MEAN TIME.

Geocentric.				Heliocentric.		
Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. Dist.
Noon.	Noon.	Noon.		Noon.	Noon.	
h m s	° ' "		h m	° ' "	° ' "	
12 53 53.88	S. 4 17 56.5	0.3054334	20 12.7	165 2 53.0	N. 1 39 13.4	0.229
12 56 7.13	4 31 51.6	.3036134	20 11.0	165 29 12.5	1 38 50.3	.225
12 58 20.33	4 45 44.0	.3017755	20 9.3	165 55 32.5	1 38 26.8	.220
13 0 23.49	4 59 38.6	.2999196	20 7.6	166 21 53.1	1 38 3.0	.216
13 2 46.60	5 13 20.3	.2980458	20 5.9	166 48 14.2	1 37 38.8	.212
13 4 59.67	5 27 4.0	.2961540	20 4.2	167 14 35.9	1 37 14.2	.208
13 7 12.70	5 40 44.7	.2942441	20 2.4	167 40 58.2	1 36 49.3	.204
13 9 25.68	5 54 22.2	.2923163	20 0.7	168 7 21.0	1 36 24.0	.200
13 11 38.63	6 7 56.5	.2903705	19 59.0	168 33 44.5	1 35 58.4	.196
13 13 51.54	6 21 27.5	.2884065	19 57.3	169 0 8.6	1 35 32.4	.192
13 16 4.41	6 34 55.2	.2864244	19 55.6	169 26 33.4	1 35 6.1	.188
13 18 17.26	6 48 19.4	.2844241	19 53.8	169 52 58.9	1 34 39.4	.184
13 20 30.07	7 1 40.2	.2824054	19 52.0	170 19 25.1	1 34 12.4	.180
13 22 42.86	7 14 57.5	.2803684	19 50.3	170 45 52.0	1 33 45.1	.176
13 24 55.62	7 28 11.1	.2783130	19 48.6	171 12 19.6	1 33 17.4	.172
13 27 8.36	7 41 21.0	.2762389	19 46.9	171 38 48.0	1 32 49.3	.168
13 29 21.09	7 54 27.2	.2741460	19 45.2	172 5 17.2	1 32 20.9	.164
13 31 33.79	8 7 29.6	.2720343	19 43.5	172 31 47.2	1 31 52.2	.160
13 33 46.48	8 20 28.0	.2699036	19 41.7	172 58 18.0	1 31 23.1	.156
13 35 59.16	8 33 22.5	.2677538	19 40.0	173 24 49.7	1 30 53.7	.152
13 38 11.82	8 46 12.8	.2655846	19 38.2	173 51 22.3	1 30 24.0	.148
13 40 24.46	8 58 59.0	.2633959	19 36.5	174 17 55.7	1 29 53.9	.144
13 42 37.08	9 11 41.0	.2611876	19 34.7	174 44 30.0	1 29 23.5	.140
13 44 49.67	9 24 18.6	.2589595	19 33.0	175 11 5.3	1 28 52.7	.136
13 47 2.24	9 36 51.8	.2567115	19 31.2	175 37 41.5	1 28 21.6	.132
13 49 14.78	9 49 20.5	.2544432	19 29.5	176 4 18.6	1 27 50.2	.128
13 51 27.29	10 1 44.6	.2521548	19 27.7	176 30 56.7	1 27 18.5	.124
13 53 39.76	10 14 4.0	.2498462	19 26.0	176 57 35.8	1 26 46.4	.120
13 55 52.19	10 26 18.7	.2475172	19 24.3	177 24 15.9	1 26 13.9	.116
13 58 4.57	10 38 28.5	.2451678	19 22.6	177 50 57.0	1 25 41.2	.112
14 0 16.90	10 50 38.5	.2427980	19 20.9	178 17 39.2	1 25 8.1	.108
14 2 29.17	S. 11 2 38.5	0.2404282	19 19.2	178 44 21.4	N. 1 24 34.7	.104

DECEMBER, 1842.

At Transit over the Meridian of Greenwich.

Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
^h ^m ^s	^s	^s	^o ['] ["]	["]	["]	["]
12 55 46.10	+ 5.54	0.15	S. 4 29 40.9	-34.7	2.2	4.2
12 57 59.15	5.54	0.15	4 43 31.9	34.6	2.2	4.3
13 0 12.15	5.54	0.15	4 57 20.9	34.5	2.2	4.3
13 2 25.11	5.54	0.15	5 11 7.1	34.4	2.2	4.3
13 4 38.03	5.54	0.15	5 24 50.3	34.3	2.2	4.3
13 6 50.91	5.54	0.15	5 38 30.5	34.1	2.2	4.3
13 9 3.74	5.53	0.15	5 52 7.5	34.0	2.3	4.4
13 11 16.53	5.53	0.15	6 5 41.4	33.9	2.3	4.4
13 13 29.29	5.53	0.15	6 19 12.0	33.7	2.3	4.4
13 15 42.01	5.53	0.15	6 32 39.2	33.6	2.3	4.4
13 17 54.70	5.53	0.15	6 46 3.1	33.4	2.3	4.4
13 20 7.36	5.53	0.15	6 59 23.6	33.3	2.3	4.5
13 22 19.99	5.53	0.15	7 12 40.4	33.1	2.3	4.5
13 24 32.60	5.53	0.15	7 25 53.8	33.0	2.3	4.5
13 26 45.18	5.52	0.15	7 39 3.4	32.8	2.3	4.5
13 28 57.75	5.52	0.16	7 52 9.3	32.7	2.3	4.5
13 31 10.30	5.52	0.16	8 5 11.4	32.5	2.4	4.6
13 33 22.84	5.52	0.16	8 18 9.6	32.4	2.4	4.6
13 35 35.36	5.52	0.16	8 31 3.8	32.2	2.4	4.6
13 37 47.86	5.52	0.16	8 43 54.0	32.0	2.4	4.6
13 40 0.34	5.52	0.16	8 56 40.1	31.8	2.4	4.7
13 42 12.80	5.52	0.16	9 9 21.9	31.7	2.4	4.7
13 44 25.24	5.52	0.16	9 21 59.4	31.5	2.4	4.7
13 46 37.66	5.52	0.16	9 34 32.5	31.3	2.4	4.7
13 48 50.04	5.52	0.16	9 47 1.2	31.1	2.5	4.8
13 51 2.40	5.51	0.17	9 59 25.2	30.9	2.5	4.8
13 53 14.72	5.51	0.17	10 11 44.6	30.7	2.5	4.8
13 55 27.00	5.51	0.17	10 23 59.3	30.5	2.5	4.8
13 57 39.23	5.51	0.17	10 36 9.2	30.3	2.5	4.9
13 59 51.41	5.51	0.17	10 48 14.3	30.1	2.5	4.9
14 2 3.53	5.50	0.17	11 0 14.3	29.9	2.5	4.9
14 4 15.60	+ 5.50	0.17	S. 11 12 9.3	-29.7	2.5	4.9

MEAN TIME.

Date.	Geocentric.				Heliocentric.		
	Right Ascension.	Declination.	Log. of Dist. from the Earth.	Meridian	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.	Passage.	Noon.	Noon.	Noon.
1842.	h m	° ′		h m	° ′	° ′	
Jan. 1	1 36·7	N. 2 21	0·3320	6 52·9	45 30	S. 6 4	0·4060
5	1 38·8	2 50	0·3429	6 39·4	46 26	6 0	0·4063
9	1 41·3	3 19	0·3535	6 26·1	47 22	5 56	0·4066
13	1 44·1	3 50	0·3639	6 13·1	48 18	5 52	0·4069
17	1 47·2	4 22	0·3741	6 0·4	49 14	5 48	0·4071
21	1 50·6	4 55	0·3840	5 48·0	50 10	5 44	0·4073
25	1 54·2	5 28	0·3937	5 35·9	51 5	5 40	0·4075
29	1 58·0	6 2	0·4031	5 24·0	52 1	5 36	0·4077
Feb. 2	2 2·1	6 37	0·4123	5 12·4	52 56	5 31	0·4079
6	2 6·4	7 12	0·4211	5 1·0	53 52	5 27	0·4081
10	2 10·9	7 47	0·4297	4 49·8	54 47	5 22	0·4083
14	2 15·6	8 22	0·4380	4 38·8	55 42	5 18	0·4085
18	2 20·5	8 58	0·4460	4 27·9	56 37	5 13	0·4087
22	2 25·6	9 33	0·4537	4 17·2	57 33	5 9	0·4089
26	2 30·8	10 8	0·4610	4 6·6	58 28	5 4	0·4090
March 2	2 36·1	10 43	0·4680	3 56·2	59 23	4 59	0·4091
6	2 41·6	11 18	0·4748	3 46·0	60 18	4 54	0·4092
10	2 47·2	11 52	0·4813	3 35·9	61 13	4 49	0·4093
14	2 53·0	12 26	0·4874	3 25·9	62 8	4 44	0·4094
18	2 58·9	13 0	0·4933	3 16·0	63 3	4 39	0·4095
22	3 4·9	13 33	0·4989	3 6·3	63 57	4 33	0·4096
26	3 11·0	14 6	0·5042	2 56·7	64 52	4 28	0·4097
30	3 17·3	14 38	0·5092	2 47·2	65 47	4 22	0·4097
April 3	3 23·7	15 9	0·5139	2 37·8	66 42	4 17	0·4098
7	3 30·1	15 39	0·5184	2 28·5	67 36	4 11	0·4098
11	3 36·6	16 8	0·5225	2 19·3	68 31	4 6	0·4098
15	3 43·2	16 37	0·5264	2 10·1	69 26	4 0	0·4098
19	3 49·9	17 5	0·5300	2 1·1	70 21	3 55	0·4098
23	3 56·7	17 31	0·5334	1 52·1	71 15	3 49	0·4098
27	4 3·6	17 56	0·5365	1 43·2	72 10	3 43	0·4098
May 1	4 10·5	18 21	0·5393	1 34·3	73 4	3 37	0·4098
5	4 17·5	N. 18 44	0·5419	1 25·5	73 58	S. 3 31	0·4098

MEAN TIME.

Date.	Geocentric.				Heliocentric.		
	Right Ascension.	Declination.	Log. of Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1842.							
May 5	h m 4 17.5	N. 18 44	0.5419	h m 1 25.5	° ' / 73 58	S. 3 31	0.4098
9	4 24.5	19 6	0.5442	1 16.8	74 53	3 25	0.4097
13	4 31.6	19 27	0.5463	1 8.2	75 47	3 19	0.4097
17	4 38.8	19 47	0.5481	0 59.6	76 42	3 13	0.4096
21	4 46.0	20 6	0.5496	0 51.1	77 37	3 7	0.4095
25	4 53.3	20 23	0.5509	0 42.6	78 32	3 1	0.4094
29	5 0.6	20 39	0.5520	0 34.1	79 26	2 55	0.4093
June 2	5 7.9	20 54	0.5528	0 25.7	80 21	2 49	0.4092
6	5 15.3	21 7	0.5534	0 17.3	81 16	2 43	0.4091
10	5 22.7	21 19	0.5537	0 9.0	82 11	2 36	0.4090
14	5 30.1	21 30	0.5538	{ 0 2.3 }	83 5	2 30	0.4089
18	5 37.6	21 39	0.5536	23 50.2	84 0	2 23	0.4087
22	5 45.0	21 47	0.5532	23 42.0	84 55	2 17	0.4085
26	5 52.5	21 54	0.5525	23 33.7	85 50	2 10	0.4083
30	6 0.0	21 59	0.5516	23 25.5	86 45	2 4	0.4081
July 4	6 7.5	22 3	0.5504	23 17.2	87 40	1 57	0.4079
8	6 15.0	22 6	0.5490	23 8.9	88 35	1 50	0.4077
12	6 22.5	22 7	0.5474	23 0.6	89 30	1 43	0.4075
16	6 30.0	22 7	0.5455	22 52.3	90 25	1 37	0.4073
20	6 37.4	22 6	0.5434	22 43.9	91 20	1 30	0.4070
24	6 44.8	22 3	0.5410	22 35.6	92 15	1 23	0.4068
28	6 52.2	21 59	0.5384	22 27.2	93 11	1 16	0.4065
Aug. 1	6 59.5	21 54	0.5355	22 18.8	94 6	1 10	0.4063
5	7 6.8	21 47	0.5324	22 10.3	95 2	1 3	0.4060
9	7 14.1	21 39	0.5290	22 1.8	95 57	0 56	0.4057
13	7 21.3	21 31	0.5253	21 53.3	96 53	0 49	0.4054
17	7 28.5	21 21	0.5214	21 44.7	97 48	0 42	0.4051
21	7 35.6	21 11	0.5172	21 36.0	98 44	0 35	0.4048
25	7 42.6	20 59	0.5127	21 27.3	99 40	0 28	0.4045
29	7 49.6	20 47	0.5080	21 18.5	100 36	0 21	0.4041
Sept. 2	7 56.5	20 34	0.5030	21 9.6	101 32	0 14	0.4038
6	8 3.3	N. 20 20	0.4978	21 0.7	102 28	S. 0 7	0.4035

MEAN TIME.

Date.	Geocentric.				Heliocentric.		
	Right Ascension.	Declination.	Log. of Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1842.							
Sept. 6	h m 8 3 3	N. 20 20	0 4978	h m 21 0 7	102 28	S. 0 7	0 4034
10	8 10 0	20 6	0 4923	20 51 6	103 24	0 0	0 4030
14	8 16 7	19 51	0 4864	20 42 5	104 20	N. 0 7	0 4026
18	8 23 3	19 36	0 4802	20 33 2	105 16	0 14	0 4023
22	8 29 7	19 20	0 4738	20 23 9	106 13	0 21	0 4019
26	8 36 0	19 4	0 4671	20 14 5	107 9	0 28	0 4015
30	8 42 2	18 47	0 4601	20 4 9	108 6	0 35	0 4011
Oct. 4	8 48 3	18 30	0 4528	19 55 2	109 2	0 42	0 4007
8	8 54 3	18 13	0 4451	19 45 4	109 59	0 49	0 4002
12	9 0 1	17 57	0 4372	19 35 4	110 56	0 56	0 3998
16	9 5 8	17 41	0 4289	19 25 3	111 53	1 3	0 3993
20	9 11 3	17 26	0 4203	19 15 0	112 50	1 10	0 3989
24	9 16 6	17 11	0 4115	19 4 6	113 48	1 17	0 3984
28	9 21 7	16 57	0 4023	18 54 0	114 45	1 24	0 3979
Nov. 1	9 26 7	16 43	0 3929	18 43 1	115 43	1 32	0 3974
5	9 31 4	16 30	0 3831	18 32 0	116 41	1 39	0 3969
9	9 36 0	16 18	0 3731	18 20 8	117 39	1 46	0 3964
13	9 40 3	16 7	0 3628	18 9 3	118 37	1 53	0 3959
17	9 44 4	15 57	0 3522	17 57 6	119 35	2 0	0 3954
21	9 48 2	15 49	0 3414	17 45 6	120 33	2 7	0 3949
25	9 51 8	15 43	0 3303	17 33 4	121 32	2 14	0 3943
29	9 55 0	15 39	0 3190	17 20 8	122 30	2 21	0 3938
Dec. 3	9 57 9	15 38	0 3075	17 7 9	123 29	2 28	0 3932
7	10 0 4	15 39	0 2959	16 54 6	124 28	2 35	0 3927
11	10 2 6	15 42	0 2842	16 41 0	125 27	2 42	0 3921
15	10 4 4	15 48	0 2726	16 27 0	126 26	2 49	0 3915
19	10 5 8	15 56	0 2610	16 12 6	127 26	2 55	0 3909
23	10 6 7	16 7	0 2495	15 57 7	128 26	3 2	0 3903
27	10 7 2	16 21	0 2382	15 42 4	129 26	3 9	0 3897
31	10 7 2	16 38	0 2270	15 26 6	130 26	3 16	0 3891
35	10 6 8	N. 16 59	0 2161	15 10 3	131 26	N. 3 22	0 3885

EPHEMERIS OF VESTA FOR THE OPPOSITION.

VESTA

will not be in **OPPOSITION** to the **SUN**

during the year 1842.

EPHEMERIS OF CERES FOR THE OPPOSITION.

CERES

will not be in OPPOSITION to the SUN

during the year 1842.

EPHEMERIS OF CERES FOR THE OPPOSITION.

CERES

will not be in OPPOSITION to the SUN

during the year 1842.

JANUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	18 14 32 ^{h m s} .42	S. 23 17 13 ^{o ' N} .2	0.7927537	23 28 ^{h m} .7	271 57 32 ^{o ' N} .7	N.0 9 23 ^{o ' N} .1	0.7186447
2	18 15 32 ^{h m s} .34	23 16 57 ^{o ' N} .2	.7925764	23 25 ^{h m} .8	272 2 28 ^{o ' N} .2	0 9 16 ^{o ' N} .4	.7186145
3	18 16 32 ^{h m s} .21	23 16 39 ^{o ' N} .7	.7923840	23 22 ^{h m} .8	272 7 23 ^{o ' N} .9	0 9 9 ^{o ' N} .7	.7185844
4	18 17 32 ^{h m s} .01	23 16 20 ^{o ' N} .9	.7921763	23 19 ^{h m} .9	272 12 19 ^{o ' N} .6	0 9 2 ^{o ' N} .9	.7185543
5	18 18 31 ^{h m s} .75	23 16 0 ^{o ' N} .6	.7919540	23 17 ^{h m} .0	272 17 15 ^{o ' N} .3	0 8 56 ^{o ' N} .2	.7185242
6	18 19 31 ^{h m s} .42	23 15 38 ^{o ' N} .9	.7917163	23 14 ^{h m} .1	272 22 11 ^{o ' N} .1	0 8 49 ^{o ' N} .5	.7184942
7	18 20 31 ^{h m s} .01	23 15 15 ^{o ' N} .8	.7914633	23 11 ^{h m} .1	272 27 6 ^{o ' N} .9	0 8 42 ^{o ' N} .7	.7184641
8	18 21 30 ^{h m s} .51	23 14 51 ^{o ' N} .3	.7911956	23 8 ^{h m} .2	272 32 2 ^{o ' N} .7	0 8 36 ^{o ' N} .0	.7184341
9	18 22 29 ^{h m s} .92	23 14 25 ^{o ' N} .5	.7909126	23 5 ^{h m} .2	272 36 58 ^{o ' N} .6	0 8 29 ^{o ' N} .3	.7184040
10	18 23 29 ^{h m s} .22	23 13 58 ^{o ' N} .2	.7906144	23 2 ^{h m} .3	272 41 54 ^{o ' N} .5	0 8 22 ^{o ' N} .5	.7183739
11	18 24 28 ^{h m s} .42	23 13 29 ^{o ' N} .7	.7903012	22 59 ^{h m} .3	272 46 50 ^{o ' N} .5	0 8 15 ^{o ' N} .8	.7183439
12	18 25 27 ^{h m s} .50	23 12 59 ^{o ' N} .8	.7899729	22 56 ^{h m} .4	272 51 46 ^{o ' N} .5	0 8 9 ^{o ' N} .0	.7183138
13	18 26 26 ^{h m s} .46	23 12 28 ^{o ' N} .6	.7896295	22 53 ^{h m} .4	272 56 42 ^{o ' N} .5	0 8 2 ^{o ' N} .3	.7182837
14	18 27 25 ^{h m s} .30	23 11 56 ^{o ' N} .1	.7892711	22 50 ^{h m} .5	273 1 38 ^{o ' N} .6	0 7 55 ^{o ' N} .6	.7182536
15	18 28 23 ^{h m s} .99	23 11 22 ^{o ' N} .4	.7888977	22 47 ^{h m} .5	273 6 34 ^{o ' N} .7	0 7 48 ^{o ' N} .8	.7182235
16	18 29 22 ^{h m s} .55	23 10 47 ^{o ' N} .3	.7885094	22 44 ^{h m} .5	273 11 30 ^{o ' N} .9	0 7 42 ^{o ' N} .1	.7181934
17	18 30 20 ^{h m s} .95	23 10 11 ^{o ' N} .0	.7881062	22 41 ^{h m} .5	273 16 27 ^{o ' N} .1	0 7 35 ^{o ' N} .3	.7181633
18	18 31 19 ^{h m s} .20	23 9 33 ^{o ' N} .4	.7876881	22 38 ^{h m} .6	273 21 23 ^{o ' N} .3	0 7 28 ^{o ' N} .6	.7181331
19	18 32 17 ^{h m s} .28	23 8 54 ^{o ' N} .7	.7872553	22 35 ^{h m} .6	273 26 19 ^{o ' N} .6	0 7 21 ^{o ' N} .8	.7181030
20	18 33 15 ^{h m s} .20	23 8 14 ^{o ' N} .7	.7868077	22 32 ^{h m} .7	273 31 15 ^{o ' N} .9	0 7 15 ^{o ' N} .0	.7180728
21	18 34 12 ^{h m s} .94	23 7 33 ^{o ' N} .5	.7863453	22 29 ^{h m} .7	273 36 12 ^{o ' N} .3	0 7 8 ^{o ' N} .3	.7180427
22	18 35 10 ^{h m s} .50	23 6 51 ^{o ' N} .2	.7858683	22 26 ^{h m} .7	273 41 8 ^{o ' N} .7	0 7 1 ^{o ' N} .5	.7180125
23	18 36 7 ^{h m s} .88	23 6 7 ^{o ' N} .7	.7853767	22 23 ^{h m} .7	273 46 5 ^{o ' N} .2	0 6 54 ^{o ' N} .8	.7179824
24	18 37 5 ^{h m s} .07	23 5 23 ^{o ' N} .1	.7848705	22 20 ^{h m} .7	273 51 1 ^{o ' N} .7	0 6 48 ^{o ' N} .0	.7179522
25	18 38 2 ^{h m s} .06	23 4 37 ^{o ' N} .3	.7843498	22 17 ^{h m} .7	273 55 58 ^{o ' N} .2	0 6 41 ^{o ' N} .2	.7179220
26	18 38 58 ^{h m s} .84	23 3 50 ^{o ' N} .5	.7838146	22 14 ^{h m} .7	274 0 54 ^{o ' N} .7	0 6 34 ^{o ' N} .5	.7178918
27	18 39 55 ^{h m s} .42	23 3 2 ^{o ' N} .6	.7832649	22 11 ^{h m} .7	274 5 51 ^{o ' N} .3	0 6 27 ^{o ' N} .7	.717861
28	18 40 51 ^{h m s} .79	23 2 13 ^{o ' N} .6	.7827007	22 8 ^{h m} .7	274 10 48 ^{o ' N} .0	0 6 20 ^{o ' N} .9	.7178313
29	18 41 47 ^{h m s} .93	23 1 23 ^{o ' N} .6	.7821222	22 5 ^{h m} .7	274 15 44 ^{o ' N} .7	0 6 14 ^{o ' N} .2	.7178012
30	18 42 43 ^{h m s} .85	23 0 32 ^{o ' N} .6	.7815293	22 2 ^{h m} .7	274 20 41 ^{o ' N} .4	0 6 7 ^{o ' N} .4	.7177710
31	18 43 39 ^{h m s} .54	22 59 40 ^{o ' N} .6	.7809221	21 59 ^{h m} .7	274 25 38 ^{o ' N} .1	0 6 0 ^{o ' N} .6	.7177408
32	18 44 34 ^{h m s} .99	S. 22 58 47 ^{o ' N} .6	0.7803005	21 56 ^{h m} .7	274 30 34 ^{o ' N} .9	N.0 5 53 ^{o ' N} .8	0.7177106

JANUARY, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
	^h ^m ^s	^s	^s	^o ['] ["]	["]	["]	["]
1	18 15 31.04	+ 2.49	1.16	S. 23 16 57.4	+ 0.7	14.9	1.4
2	18 16 30.78	2.49	1.16	23 16 40.0	0.8	14.9	1.4
3	18 17 30.47	2.49	1.16	23 16 21.3	0.8	14.9	1.4
4	18 18 30.09	2.48	1.16	23 16 1.1	0.9	14.9	1.4
5	18 19 29.64	2.48	1.16	23 15 39.5	0.9	14.9	1.4
6	18 20 29.11	2.48	1.16	23 15 16.5	1.0	14.9	1.4
7	18 21 28.49	2.47	1.16	23 14 52.1	1.0	14.9	1.4
8	18 22 27.77	2.47	1.16	23 14 26.4	1.1	14.9	1.4
9	18 23 26.96	2.46	1.16	23 13 59.3	1.2	14.9	1.4
10	18 24 26.04	2.46	1.17	23 13 30.9	1.2	15.0	1.4
11	18 25 25.01	2.45	1.17	23 13 1.1	1.3	15.0	1.4
12	18 26 23.86	2.45	1.17	23 12 30.0	1.3	15.0	1.4
13	18 27 22.58	2.44	1.17	23 11 57.6	1.4	15.0	1.4
14	18 28 21.16	2.44	1.17	23 11 23.9	1.4	15.0	1.4
15	18 29 19.60	2.43	1.17	23 10 49.0	1.5	15.0	1.4
16	18 30 17.89	2.43	1.17	23 10 12.8	1.5	15.0	1.4
17	18 31 16.03	2.42	1.18	23 9 35.4	1.6	15.1	1.4
18	18 32 14.00	2.41	1.18	23 8 56.8	1.6	15.1	1.4
19	18 33 11.81	2.41	1.18	23 8 17.0	1.7	15.1	1.4
20	18 34 9.45	2.40	1.18	23 7 36.0	1.7	15.1	1.4
21	18 35 6.90	2.39	1.18	23 6 53.8	1.8	15.1	1.4
22	18 36 4.17	2.38	1.18	23 6 10.5	1.8	15.1	1.4
23	18 37 1.25	2.37	1.18	23 5 26.1	1.9	15.1	1.4
24	18 37 58.13	2.37	1.18	23 4 40.5	1.9	15.2	1.4
25	18 38 54.81	2.36	1.18	23 3 53.8	2.0	15.2	1.4
26	18 39 51.29	2.35	1.18	23 3 6.1	2.0	15.2	1.4
27	18 40 47.55	2.34	1.19	23 2 17.3	2.1	15.2	1.4
28	18 41 43.59	2.33	1.19	23 1 27.5	2.1	15.2	1.4
29	18 42 39.41	2.32	1.19	23 0 36.6	2.1	15.3	1.4
30	18 43 35.00	2.31	1.19	22 59 44.8	2.2	15.3	1.4
31	18 44 30.35	2.30	1.19	22 58 52.0	2.2	15.3	1.4
32	18 45 25.46	+ 2.29	1.19	S. 22 57 58.2	+ 2.3	15.3	1.4

FEBRUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	^h ^m ^s	^o ['] ["]		^h ^m	^o ['] ["]	^o ['] ["]	
1	18 44 34.99	S. 22 58 47.60	.7803005	21 56.7	274 30 34.9	N. 0 5 53.8	0.7177106
2	18 45 30.19	22 57 53.7	.7796646	21 53.7	274 35 31.8	0 5 47.1	.7176803
3	18 46 25.15	22 56 58.8	.7790144	21 50.7	274 40 28.7	0 5 40.3	.7176501
4	18 47 19.84	22 56 3.0	.7783499	21 47.6	274 45 25.6	0 5 33.5	.7176198
5	18 48 14.27	22 55 6.3	.7776712	21 44.6	274 50 22.6	0 5 26.7	.7175895
6	18 49 8.42	22 54 8.8	.7769782	21 41.5	274 55 19.6	0 5 19.9	.7175592
7	18 50 2.29	22 53 10.4	.7762711	21 38.5	275 0 16.6	0 5 13.1	.7175289
8	18 50 55.88	22 52 11.2	.7755499	21 35.4	275 5.13.7	0 5 6.4	.7174985
9	18 51 49.18	22 51 11.2	.7748147	21 32.4	275 10 10.8	0 4 59.6	.7174682
10	18 52 42.17	22 50 10.5	.7740656	21 29.3	275 15 7.9	0 4 52.8	.7174379
11	18 53 34.86	22 49 9.1	.7733025	21 26.3	275 20 5.1	0 4 46.0	.7174075
12	18 54 27.23	22 48 7.0	.7725256	21 23.2	275 25 2.4	0 4 39.2	.7173772
13	18 55 19.28	22 47 4.3	.7717350	21 20.2	275 29 59.7	0 4 32.4	.7173469
14	18 56 11.00	22 46 1.0	.7709308	21 17.1	275 34 57.0	0 4 25.6	.7173165
15	18 57 2.38	22 44 57.1	.7701131	21 14.0	275 39 54.3	0 4 18.8	.7172862
16	18 57 53.42	22 43 52.6	.7692819	21 10.9	275 44 51.7	0 4 12.0	.7172558
17	18 58 44.11	22 42 47.7	.7684375	21 7.8	275 49 49.1	0 4 5.2	.7172254
18	18 59 34.44	22 41 42.2	.7675798	21 4.7	275 54 46.6	0 3 58.4	.7171951
19	19 0 24.41	22 40 36.4	.7667090	21 1.6	275 59 44.2	0 3 51.6	.7171647
20	19 1 14.02	22 39 30.0	.7658252	20 58.5	276 4 41.7	0 3 44.8	.7171343
21	19 2 3.25	22 38 23.3	.7649285	20 55.3	276 9 39.3	0 3 38.0	.7171039
22	19 2 52.10	22 37 16.2	.7640189	20 52.2	276 14 37.0	0 3 31.2	.7170735
23	19 3 40.57	22 36 8.7	.7630966	20 49.1	276 19 34.6	0 3 24.4	.7170431
24	19 4 28.65	22 35 0.9	.7621616	20 45.9	276 24 32.4	0 3 17.6	.7170128
25	19 5 16.33	22 33 52.9	.7612140	20 42.7	276 29 30.1	0 3 10.8	.7169823
26	19 6 3.61	22 32 44.5	.7602539	20 39.6	276 34 27.9	0 3 4.0	.7169519
27	19 6 50.48	22 31 36.0	.7592814	20 36.5	276 39 25.8	0 2 57.1	.7169215
28	19 7 36.93	22 30 27.3	.7582965	20 33.3	276 44 23.7	0 2 50.3	.7168911
29	19 8 22.97	S. 22 29 18.4	.7572993	20 30.1	276 49 21.6	N. 0 2 43.5	0.7168607

FEBRUARY, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 18 ^m 45 ^s 25·46	+ 2·29	1·19	S. 22° 57' 58" 2	+ 2·3	15·3	1·4
2	18 46 20·32	2·28	1·20	22 57 3·6	2·3	15·4	1·4
3	18 47 14·93	2·27	1·20	22 56 8·0	2·3	15·4	1·4
4	18 48 9·27	2·26	1·20	22 55 11·5	2·4	15·4	1·4
5	18 49 3·33	2·25	1·20	22 54 14·1	2·4	15·4	1·4
6	18 49 57·12	2·24	1·21	22 53 16·0	2·4	15·5	1·4
7	18 50 50·61	2·22	1·21	22 52 17·0	2·5	15·5	1·4
8	18 51 43·82	2·21	1·21	22 51 17·2	2·5	15·5	1·4
9	18 52 36·73	2·20	1·21	22 50 16·7	2·5	15·6	1·4
10	18 53 29·24	2·19	1·22	22 49 15·5	2·6	15·6	1·4
11	18 54 21·64	2·17	1·22	22 48 13·6	2·6	15·6	1·4
12	18 55 13·61	2·16	1·22	22 47 11·1	2·6	15·7	1·4
13	18 56 5·26	2·15	1·22	22 46 8·0	2·6	15·7	1·5
14	18 56 56·58	2·13	1·22	22 45 4·3	2·7	15·7	1·5
15	18 57 47·56	2·12	1·22	22 44 0·1	2·7	15·7	1·5
16	18 58 38·18	2·10	1·23	22 42 55·3	2·7	15·8	1·5
17	18 59 28·45	2·09	1·23	22 41 50·1	2·7	15·8	1·5
18	19 0 18·35	2·07	1·23	22 40 44·4	2·7	15·8	1·5
19	19 1 7·89	2·06	1·24	22 39 38·2	2·8	15·8	1·5
20	19 1 57·06	2·04	1·24	22 38 31·7	2·8	15·9	1·5
21	19 2 45·86	2·03	1·24	22 37 24·8	2·8	15·9	1·5
22	19 3 34·27	2·01	1·24	22 36 17·5	2·8	15·9	1·5
23	19 4 22·29	1·99	1·25	22 35 9·9	2·8	15·9	1·5
24	19 5 9·93	1·98	1·25	22 34 2·0	2·8	16·0	1·5
25	19 5 57·17	1·96	1·25	22 32 53·9	2·8	16·0	1·5
26	19 6 43·99	1·94	1·25	22 31 45·5	2·9	16·0	1·5
27	19 7 30·40	1·93	1·25	22 30 37·0	2·9	16·1	1·5
28	19 8 16·39	1·91	1·26	22 29 28·3	2·9	16·1	1·5
29	19 9 1·96	+ 1·89	1·26	S. 22 28 19·5	+ 2·9	16·2	1·5

MARCH, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
1	19 8 22.97	S. 22 29 18.4	0.7572993	20 30.1	276 49 21.6	N. 0 2 43.5	0.7168607
2	19 9 8.57	22 28 9.5	.7562899	20 26.9	276 54 19.5	0 2 36.7	.7168302
3	19 9 53.75	22 27 0.4	.7552685	20 23.7	276 59 17.5	0 2 29.9	.7167998
4	19 10 38.47	22 25 51.3	.7542350	20 20.5	277 4 15.6	0 2 23.0	.7167694
5	19 11 22.75	22 24 42.3	.7531896	20 17.3	277 9 13.7	0 2 16.2	.7167389
6	19 12 6.57	22 23 33.2	.7521325	20 14.2	277 14 11.8	0 2 9.4	.7167085
7	19 12 49.92	22 22 24.2	.7510636	20 11.0	277 19 10.0	0 2 2.6	.7166781
8	19 13 32.80	22 21 15.3	.7499832	20 7.7	277 24 8.2	0 1 55.8	.7166477
9	19 14 15.20	22 20 6.6	.7488914	20 4.5	277 29 6.4	0 1 48.9	.7166174
10	19 14 57.12	22 18 58.1	.7477883	20 1.2	277 34 4.7	0 1 42.1	.7165870
11	19 15 38.53	22 17 49.8	.7466741	19 58.0	277 39 3.0	0 1 35.3	.7165566
12	19 16 19.45	22 16 41.8	.7455490	19 54.7	277 44 1.4	0 1 28.4	.7165262
13	19 16 59.86	22 15 34.1	.7444130	19 51.4	277 48 59.8	0 1 21.6	.7164958
14	19 17 39.75	22 14 26.8	.7432664	19 48.1	277 53 58.3	0 1 14.8	.7164653
15	19 18 19.11	22 13 19.8	.7421094	19 44.8	277 58 56.7	0 1 7.9	.7164349
16	19 18 57.95	22 12 13.2	.7409422	19 41.5	278 3 55.3	0 1 1.1	.7164045
17	19 19 36.25	22 11 7.2	.7397648	19 38.3	278 8 53.9	0 0 54.3	.7163741
18	19 20 14.01	22 10 1.6	.7385776	19 35.0	278 13 52.5	0 0 47.4	.7163437
19	19 20 51.22	22 8 56.5	.7373807	19 31.7	278 18 51.2	0 0 40.6	.7163132
20	19 21 27.87	22 7 52.1	.7361744	19 28.3	278 23 49.9	0 0 33.8	.7162828
21	19 22 3.97	22 6 48.2	.7349587	19 25.0	278 28 48.6	0 0 26.9	.7162524
22	19 22 39.49	22 5 44.9	.7337338	19 21.6	278 33 47.4	0 0 20.1	.7162219
23	19 23 14.45	22 4 42.4	.7325000	19 18.3	278 38 46.2	0 0 13.2	.7161915
24	19 23 48.83	22 3 40.5	.7312574	19 14.9	278 43 45.1	N. 0 0 6.4	.7161610
25	19 24 22.63	22 2 39.4	.7300063	19 11.5	278 48 44.0	S. 0 0 0.4	.7161306
26	19 24 55.83	22 1 39.0	.7287467	19 8.1	278 53 43.0	0 0 7.3	.7161001
27	19 25 28.44	22 0 39.5	.7274789	19 4.7	278 58 42.0	0 0 14.1	.7160696
28	19 26 0.45	21 59 40.8	.7262030	19 1.3	279 3 41.0	0 0 21.0	.7160391
29	19 26 31.85	21 58 43.0	.7249192	18 57.9	279 8 40.1	0 0 27.8	.7160087
30	19 27 2.63	21 57 46.2	.7236278	18 54.5	279 13 39.2	0 0 34.7	.7159782
31	19 27 32.79	21 56 50.3	.7223289	18 51.0	279 18 38.4	0 0 41.5	.7159477
32	19 28 2.32	S. 21 55 55.4	0.7210227	18 47.6	279 23 37.6	S. 0 0 48.4	0.7159172

MARCH, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 19 ^m 9 ^s 1 ^o 96	+ 1 ^o 89	1 ^o 26	S. 22 28 19 ^o 5	+ 2 ^o 9	16 ^o 2	1 ^o 5
2	19 9 47 09	1 ^o 87	1 ^o 26	22 27 10 6	2 ^o 9	16 2	1 5
3	19 10 31 78	1 ^o 85	1 ^o 26	22 26 1 7	2 ^o 9	16 3	1 5
4	19 11 16 03	1 ^o 83	1 ^o 26	22 24 52 7	2 ^o 9	16 3	1 5
5	19 11 59 82	1 ^o 82	1 ^o 26	22 23 43 8	2 ^o 9	16 3	1 5
6	19 12 43 15	1 ^o 80	1 ^o 27	22 22 35 0	2 ^o 9	16 4	1 5
7	19 13 26 01	1 ^o 78	1 ^o 27	22 21 26 3	2 ^o 9	16 4	1 5
8	19 14 8 39	1 ^o 76	1 ^o 28	22 20 17 7	2 ^o 9	16 5	1 5
9	19 14 50 30	1 ^o 74	1 ^o 28	22 19 9 3	2 ^o 8	16 5	1 5
10	19 15 31 71	1 ^o 72	1 ^o 28	22 18 1 1	2 ^o 8	16 6	1 5
11	19 16 12 62	1 ^o 69	1 ^o 29	22 16 53 2	2 ^o 8	16 6	1 6
12	19 16 53 02	1 ^o 67	1 ^o 29	22 15 45 6	2 ^o 8	16 7	1 6
13	19 17 32 91	1 ^o 65	1 ^o 29	22 14 38 3	2 ^o 8	16 7	1 6
14	19 18 12 27	1 ^o 63	1 ^o 29	22 13 31 5	2 ^o 8	16 7	1 6
15	19 18 51 11	1 ^o 61	1 ^o 30	22 12 25 0	2 ^o 8	16 8	1 6
16	19 19 29 42	1 ^o 59	1 ^o 30	22 11 19 0	2 ^o 7	16 8	1 6
17	19 20 7 19	1 ^o 56	1 ^o 30	22 10 13 5	2 ^o 7	16 9	1 6
18	19 20 44 41	1 ^o 54	1 ^o 31	22 9 8 5	2 ^o 7	16 9	1 6
19	19 21 21 08	1 ^o 52	1 ^o 31	22 8 4 1	2 ^o 7	17 0	1 6
20	19 21 57 20	1 ^o 49	1 ^o 31	22 7 0 2	2 ^o 6	17 0	1 6
21	19 22 32 76	1 ^o 47	1 ^o 32	22 5 57 0	2 ^o 6	17 1	1 6
22	19 23 7 75	1 ^o 45	1 ^o 32	22 4 54 4	2 ^o 6	17 1	1 6
23	19 23 42 16	1 ^o 42	1 ^o 33	22 3 52 6	2 ^o 6	17 2	1 6
24	19 24 15 99	1 ^o 40	1 ^o 33	22 2 51 5	2 ^o 6	17 2	1 6
25	19 24 49 23	1 ^o 37	1 ^o 34	22 1 51 1			1 6
26	19 25 21 89	1 ^o 35	1 ^o 34	22 0 51 6			1 6
27	19 25 53 94	1 ^o 32	1 ^o 35	21 59 52 9			1 6
28	19 26 25 39	1 ^o 30	1 ^o 35	21 58 55 0			
29	19 26 56 22	1 ^o 27	1 ^o 36	21 57 58 1			
30	19 27 26 44	1 ^o 25	1 ^o 36	21 57 2 2			
31	19 27 56 04	1 ^o 22	1 ^o 36	21 56 7 2			
32	19 28 25 00	+ 1 ^o 19	1 ^o 36	S. 21 55 13 3			

APRIL, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	19 28 2 ^h 32 ^m	S. 21 55 55 ^o 4 ^{''}	0.7210227	18 47 ^h 6 ^m	279 23 37 ^o 6 ^{''}	S. 0 0 48 ^o 4 ^{''}	0.7159172
2	19 28 31 ^h 22 ^m	21 55 1 ^o 5 ^{''}	.7197094	18 44 ^h 2 ^m	279 28 36 ^o 8 ^{''}	0 0 55 ^o 2 ^{''}	.7158867
3	19 28 59 ^h 47 ^m	21 54 8 ^o 8 ^{''}	.7183893	18 40 ^h 7 ^m	279 33 36 ^o 1 ^{''}	0 1 2 ^o 1 ^{''}	.7158562
4	19 29 27 ^h 08 ^m	21 53 17 ^o 1 ^{''}	.7170627	18 37 ^h 2 ^m	279 38 35 ^o 4 ^{''}	0 1 8 ^o 9 ^{''}	.7158257
5	19 29 54 ^h 02 ^m	21 52 26 ^o 6 ^{''}	.7157297	18 33 ^h 7 ^m	279 43 34 ^o 8 ^{''}	0 1 15 ^o 8 ^{''}	.7157952
6	19 30 20 ^h 30 ^m	21 51 37 ^o 3 ^{''}	.7143906	18 30 ^h 2 ^m	279 48 34 ^o 2 ^{''}	0 1 22 ^o 7 ^{''}	.7157646
7	19 30 45 ^h 91 ^m	21 50 49 ^o 2 ^{''}	.7130457	18 26 ^h 6 ^m	279 53 33 ^o 7 ^{''}	0 1 29 ^o 5 ^{''}	.7157340
8	19 31 10 ^h 83 ^m	21 50 2 ^o 4 ^{''}	.7116952	18 23 ^h 1 ^m	279 58 33 ^o 2 ^{''}	0 1 36 ^o 4 ^{''}	.7157034
9	19 31 35 ^h 08 ^m	21 49 16 ^o 9 ^{''}	.7103396	18 19 ^h 5 ^m	280 3 32 ^o 7 ^{''}	0 1 43 ^o 2 ^{''}	.7156728
10	19 31 58 ^h 63 ^m	21 48 32 ^o 7 ^{''}	.7089791	18 16 ^h 0 ^m	280 8 32 ^o 3 ^{''}	0 1 50 ^o 1 ^{''}	.7156422
11	19 32 21 ^h 48 ^m	21 47 49 ^o 9 ^{''}	.7076140	18 12 ^h 5 ^m	280 13 32 ^o 0 ^{''}	0 1 57 ^o 0 ^{''}	.7156116
12	19 32 43 ^h 63 ^m	21 47 8 ^o 5 ^{''}	.7062446	18 8 ^h 9 ^m	280 18 31 ^o 7 ^{''}	0 2 3 ^o 8 ^{''}	.7155810
13	19 33 5 ^h 06 ^m	21 46 28 ^o 6 ^{''}	.7048714	18 5 ^h 3 ^m	280 23 31 ^o 4 ^{''}	0 2 10 ^o 7 ^{''}	.7155503
14	19 33 25 ^h 78 ^m	21 45 50 ^o 0 ^{''}	.7034945	18 1 ^h 7 ^m	280 28 31 ^o 1 ^{''}	0 2 17 ^o 5 ^{''}	.7155197
15	19 33 45 ^h 78 ^m	21 45 13 ^o 0 ^{''}	.7021144	17 58 ^h 1 ^m	280 33 31 ^o 0 ^{''}	0 2 24 ^o 4 ^{''}	.7154891
16	19 34 5 ^h 06 ^m	21 44 37 ^o 5 ^{''}	.7007313	17 54 ^h 5 ^m	280 38 30 ^o 8 ^{''}	0 2 31 ^o 3 ^{''}	.7154585
17	19 34 23 ^h 61 ^m	21 44 3 ^o 5 ^{''}	.6993457	17 50 ^h 9 ^m	280 43 30 ^o 7 ^{''}	0 2 38 ^o 1 ^{''}	.7154278
18	19 34 41 ^h 43 ^m	21 43 31 ^o 1 ^{''}	.6979579	17 47 ^h 2 ^m	280 48 30 ^o 6 ^{''}	0 2 45 ^o 0 ^{''}	.7153972
19	19 34 58 ^h 51 ^m	21 43 0 ^o 4 ^{''}	.6965683	17 43 ^h 5 ^m	280 53 30 ^o 6 ^{''}	0 2 51 ^o 9 ^{''}	.7153666
20	19 35 14 ^h 85 ^m	21 42 31 ^o 2 ^{''}	.6951770	17 39 ^h 8 ^m	280 58 30 ^o 6 ^{''}	0 2 58 ^o 7 ^{''}	.7153359
21	19 35 30 ^h 45 ^m	21 42 3 ^o 7 ^{''}	.6937845	17 36 ^h 1 ^m	281 3 30 ^o 7 ^{''}	0 3 5 ^o 6 ^{''}	.7153053
22	19 35 45 ^h 30 ^m	21 41 37 ^o 8 ^{''}	.6923911	17 32 ^h 4 ^m	281 8 30 ^o 8 ^{''}	0 3 12 ^o 5 ^{''}	.7152746
23	19 35 59 ^h 39 ^m	21 41 13 ^o 6 ^{''}	.6909971	17 28 ^h 8 ^m	281 13 31 ^o 0 ^{''}	0 3 19 ^o 3 ^{''}	.7152440
24	19 36 12 ^h 73 ^m	21 40 51 ^o 1 ^{''}	.6896029	17 25 ^h 1 ^m	281 18 31 ^o 2 ^{''}	0 3 26 ^o 2 ^{''}	.7152133
25	19 36 25 ^h 30 ^m	21 40 30 ^o 4 ^{''}	.6882088	17 21 ^h 3 ^m	281 23 31 ^o 4 ^{''}	0 3 33 ^o 1 ^{''}	.7151827
26	19 36 37 ^h 11 ^m	21 40 11 ^o 3 ^{''}	.6868151	17 17 ^h 6 ^m	281 28 31 ^o 7 ^{''}	0 3 39 ^o 9 ^{''}	.7151521
27	19 36 48 ^h 15 ^m	21 39 54 ^o 1 ^{''}	.6854223	17 13 ^h 8 ^m	281 33 32 ^o 0 ^{''}	0 3 46 ^o 8 ^{''}	.7151214
28	19 36 58 ^h 42 ^m	21 39 38 ^o 6 ^{''}	.6840306	17 10 ^h 1 ^m	281 38 32 ^o 4 ^{''}	0 3 53 ^o 7 ^{''}	.7150908
29	19 37 7 ^h 91 ^m	21 39 24 ^o 9 ^{''}	.6826406	17 6 ^h 3 ^m	281 43 32 ^o 8 ^{''}	0 4 0 ^o 6 ^{''}	.7150601
30	19 37 16 ^h 62 ^m	21 39 13 ^o 1 ^{''}	.6812524	17 2 ^h 5 ^m	281 48 33 ^o 3 ^{''}	0 4 7 ^o 4 ^{''}	.7150295
31	19 37 24 ^h 54 ^m	S. 21 39 3 ^o 1 ^{''}	0.6798667	16 58 ^h 6 ^m	281 53 33 ^o 8 ^{''}	S. 0 4 14 ^o 3 ^{''}	0.7149988

APRIL, 1842.

At Transit over the Meridian of Greenwich.

MOMENTS.	<i>Apparent Right Ascension.</i>	<i>Variation of Right Asc. in 1 Hour of Long.</i>	<i>Sid. Time of Sem. pass. Mer.</i>	<i>Apparent Declination.</i>	<i>Variation of Declination in 1 Hour of Long.</i>	<i>Semi- diameter.</i>	<i>Hor. Par.</i>
1	19 28 25 ⁰⁰	+ 1 ¹⁹	1 ³⁶	S. 21 55 13 ³	+ 2 ²	17 ⁶	1 ⁶
2	19 28 53 ³³	1 ¹⁷	1 ³⁷	21 54 20 ⁴	2 ²	17 ⁷	1 ⁶
3	19 29 21 ⁰¹	1 ¹⁴	1 ³⁷	21 53 28 ⁶	2 ¹	17 ⁷	1 ⁶
4	19 29 48 ⁰⁴	1 ¹¹	1 ³⁸	21 52 37 ⁹	2 ¹	17 ⁸	1 ⁶
5	19 30 14 ⁴⁰	1 ⁰⁸	1 ³⁸	21 51 48 ⁵	2 ⁰	17 ⁸	1 ⁷
6	19 30 40 ¹⁰	1 ⁰⁶	1 ³⁹	21 51 0 ³	2 ⁰	17 ⁹	1 ⁷
7	19 31 5 ¹²	1 ⁰³	1 ³⁹	21 50 13 ³	1 ⁹	18 ⁰	1 ⁷
8	19 31 29 ⁴⁶	1 ⁰⁰	1 ⁴⁰	21 49 27 ⁶	1 ⁹	18 ¹	1 ⁷
9	19 31 53 ¹²	0 ⁹⁷	1 ⁴⁰	21 48 43 ²	1 ⁸	18 ¹	1 ⁷
10	19 32 16 ⁰⁸	0 ⁹⁴	1 ⁴¹	21 48 0 ²	1 ⁸	18 ²	1 ⁷
11	19 32 38 ³⁴	0 ⁹¹	1 ⁴¹	21 47 18 ⁵	1 ⁷	18 ²	1 ⁷
12	19 32 59 ⁸⁹	0 ⁸⁸	1 ⁴²	21 46 38 ³	1 ⁶	18 ³	1 ⁷
13	19 33 20 ⁷⁴	0 ⁸⁵	1 ⁴²	21 45 59 ⁶	1 ⁶	18 ³	1 ⁷
14	19 33 40 ⁸⁸	0 ⁸²	1 ⁴²	21 45 22 ²	1 ⁵	18 ⁴	1 ⁷
15	19 34 0 ²⁹	0 ⁷⁹	1 ⁴³	21 44 46 ⁴	1 ⁵	18 ⁴	1 ⁷
16	19 34 18 ⁹⁷	0 ⁷⁶	1 ⁴³	21 44 12 ²	1 ⁴	18 ⁵	1 ⁷
17	19 34 36 ⁹³	0 ⁷³	1 ⁴³	21 43 39 ⁴	1 ³	18 ⁵	1 ⁷
18	19 34 54 ¹⁶	0 ⁷⁰	1 ⁴³	21 43 8 ³	1 ³	18 ⁵	1 ⁷
19	19 35 10 ⁶⁵	0 ⁶⁷	1 ⁴⁴	21 42 38 ⁸	1 ²	18 ⁵	1 ⁷
20	19 35 26 ⁴¹	0 ⁶⁴	1 ⁴⁴	21 42 10 ⁹	1 ¹	18 ⁶	1 ⁷
21	19 35 41 ⁴²	0 ⁶¹	1 ⁴⁵	21 41 44 ⁷	1 ¹	18 ⁷	1 ⁷
22	19 35 55 ⁶⁸	0 ⁵⁸	1 ⁴⁶	21 41 20 ¹	1 ⁰	18 ⁸	1 ⁷
23	19 36 9 ¹⁹	0 ⁵⁵	1 ⁴⁷	21 40 57 ²	0 ⁹	18 ⁹	1 ⁸
24	19 36 21 ⁹⁴	0 ⁵²	1 ⁴⁷	21 40 36 ⁰	0 ⁹	19 ⁰	1 ⁸
25	19 36 33 ⁹³	0 ⁴⁸	1 ⁴⁸	21 40 16 ⁶	0 ⁸	19 ⁰	1 ⁸
26	19 36 45 ¹⁵	0 ⁴⁵	1 ⁴⁸	21 39 58 ⁰	0 ⁷	19 ¹	1 ⁸
27	19 36 55 ⁶¹	0 ⁴²	1 ⁴⁸	21 39 43 ⁰	0 ⁶	19 ¹	
28	19 37 5 ²⁹	0 ³⁹	1 ⁴⁹	21 39 28 ⁸	0 ⁶	1	
29	19 37 14 ²⁰	0 ³⁶	1 ⁴⁹	21 39 16 ⁵	0 ⁵	1	
30	19 37 22 ³³	0 ³²	1 ⁵⁰	21 39 6 ⁰	0 ⁴	1	
31	19 37 29 ⁶⁷	+ 0 ²⁹	1 ⁵⁰	S. 21 38 57 ⁴	+ 0 ³	1	

MAY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	19 37 24.54	S. 21 39 3.1	0.6798667	16 58.6	281 53 33.8	S. 0 4 14.3	0.714998
2	19 37 31.67	21 38 54.9	.6784837	16 54.7	281 58 34.3	0 4 21.2	.714968
3	19 37 38.01	21 38 48.6	.6771040	16 50.9	282 3 34.9	0 4 28.1	.714937
4	19 37 43.55	21 38 44.2	.6757281	16 47.1	282 8 35.5	0 4 34.9	.714906
5	19 37 48.29	21 38 41.7	.6743562	16 43.3	282 13 36.2	0 4 41.8	.714876
6	19 37 52.23	21 38 41.2	.6729890	16 39.4	282 18 36.9	0 4 48.7	.714845
7	19 37 55.36	21 38 42.6	.6716269	16 35.5	282 23 37.7	0 4 55.6	.714814
8	19 37 57.68	21 38 45.9	.6702705	16 31.6	282 28 38.5	0 5 2.4	.714784
9	19 37 59.19	21 38 51.2	.6689201	16 27.7	282 33 39.4	0 5 9.3	.714753
10	19 37 59.90	21 38 58.3	.6675763	16 23.8	282 38 40.3	0 5 16.2	.714723
11	19 37 59.80	21 39 7.4	.6662396	16 19.8	282 43 41.2	0 5 23.1	.714692
12	19 37 58.89	21 39 18.4	.6649103	16 15.8	282 48 42.2	0 5 29.9	.714661
13	19 37 57.17	21 39 31.3	.6635895	16 11.8	282 53 43.2	0 5 36.8	.714631
14	19 37 54.64	21 39 46.2	.6622772	16 7.8	282 58 44.3	0 5 43.7	.714600
15	19 37 51.32	21 40 3.0	.6609739	16 3.8	283 3 45.4	0 5 50.6	.714570
16	19 37 47.19	21 40 21.6	.6596803	15 59.8	283 8 46.6	0 5 57.4	.714539
17	19 37 42.26	21 40 42.2	.6583967	15 55.9	283 13 47.8	0 6 4.3	.714508
18	19 37 36.54	21 41 4.7	.6571239	15 51.9	283 18 49.1	0 6 11.2	.714478
19	19 37 30.03	21 41 29.0	.6558621	15 47.8	283 23 50.3	0 6 18.1	.714447
20	19 37 22.73	21 41 55.2	.6546119	15 43.8	283 28 51.7	0 6 24.9	.714417
21	19 37 14.64	21 42 23.2	.6533738	15 39.7	283 33 53.1	0 6 31.8	.714386
22	19 37 5.77	21 42 53.0	.6521482	15 35.6	283 38 54.5	0 6 38.7	.714355
23	19 36 56.12	21 43 24.6	.6509357	15 31.5	283 43 56.0	0 6 45.6	.714325
24	19 36 45.70	21 43 58.0	.6497366	15 27.4	283 48 57.5	0 6 52.4	.714294
25	19 36 34.51	21 44 33.1	.6485516	15 23.2	283 53 59.0	0 6 59.3	.714264
26	19 36 22.55	21 45 9.9	.6473811	15 19.1	283 59 0.6	0 7 6.2	.714233
27	19 36 9.84	21 45 48.4	.6462256	15 14.9	284 4 2.2	0 7 13.1	.714203
28	19 35 56.37	21 46 28.6	.6450857	15 10.8	284 9 3.9	0 7 20.0	.714172
29	19 35 42.15	21 47 10.5	.6439618	15 6.6	284 14 5.6	0 7 26.8	.714141
30	19 35 27.19	21 47 54.0	.6428545	15 2.4	284 19 7.4	0 7 33.7	.714112
31	19 35 11.49	21 48 39.1	.6417643	14 58.2	284 24 9.2	0 7 40.6	.714086
32	19 34 55.06	S. 21 49 25.9	0.6406918	14 54.0	284 29 11.1	S. 0 7 47.5	0.7140500

MAY, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
	h m s	s	s	° ' "	"	"	"
1	19 37 29.67	+ 0.29	1.50	S. 21 38 57.4	+ 0.3	19.4	1.8
2	19 37 36.23	0.26	1.50	21 38 50.6	0.2	19.4	1.8
3	19 37 41.99	0.22	1.51	21 38 45.7	0.2	19.5	1.8
4	19 37 46.96	0.19	1.52	21 38 42.6	+ 0.1	19.6	1.8
5	19 37 51.13	0.16	1.52	21 38 41.4	0.0	19.7	1.8
6	19 37 54.49	0.12	1.53	21 38 42.2	- 0.1	19.8	1.8
7	19 37 57.05	0.09	1.53	21 38 45.0	0.1	19.8	1.8
8	19 37 58.81	0.06	1.53	21 38 49.6	0.2	19.9	1.8
9	19 37 59.77	+ 0.02	1.54	21 38 56.1	0.3	19.9	1.8
10	19 37 59.92	- 0.01	1.54	21 39 4.6	0.4	20.0	1.8
11	19 37 59.27	0.04	1.54	21 39 14.9	0.5	20.0	1.9
12	19 37 57.81	0.08	1.55	21 39 27.2	0.6	20.1	1.9
13	19 37 55.55	0.11	1.55	21 39 41.4	0.7	20.2	1.9
14	19 37 52.50	0.14	1.55	21 39 57.5	0.7	20.2	1.9
15	19 37 48.64	0.18	1.56	21 40 15.4	0.8	20.2	1.9
16	19 37 43.99	0.21	1.56	21 40 35.3	0.9	20.3	1.9
17	19 37 38.55	0.24	1.57	21 40 57.1	0.9	20.3	1.9
18	19 37 32.32	0.28	1.58	21 41 20.7	1.0	20.4	1.9
19	19 37 25.31	0.31	1.59	21 41 46.2	1.1	20.4	1.9
20	19 37 17.52	0.34	1.59	21 42 13.5	1.2	20.5	1.9
21	19 37 8.94	0.37	1.59	21 42 42.6	1.3	20.6	1.9
22	19 36 59.59	0.41	1.60	21 43 13.6	1.3	20.6	1.9
23	19 36 49.47	0.44	1.60	21 43 46.2	1.4	20.7	1.9
24	19 36 38.58	0.47	1.61	21 44 20.6	1.5	20.8	1.9
25	19 36 26.93	0.50	1.61	21 44 56.7	1.5	20.8	1.9
26	19 36 14.53	0.53	1.62	21 45 34.5	1.6		1.9
27	19 36 1.37	0.56	1.62	21 46 14.0	1.7		1.9
28	19 35 47.46	0.59	1.63	21 46 55.2	1.7		1.9
29	19 35 32.82	0.63	1.64	21 47 37.9	1.7		1.9
30	19 35 17.44	0.66	1.64	21 48 22.3			2.0
31	19 35 1.33	0.69	1.64	21 49 8.3			2.0
32	19 34 44.49	- 0.72	1.65	S. 21 49 55.9			2.0

JUNE, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ′ ″		h m	° ′ ″	S. ° ′ ″	
1	19 34 55.06	S. 21 49 25.9	0.6406918	14 54.0	284 29 11.1	S. 0 7 47.5	0.7140500
2	19 34 37.92	21 50 14.1	.6396376	14 49.8	284 34 13.0	0 7 54.3	.7140195
3	19 34 20.06	21 51 3.9	.6386020	14 45.6	284 39 14.9	0 8 1.2	.7139881
4	19 34 1.49	21 51 55.1	.6375858	14 41.3	284 44 16.9	0 8 8.1	.7139565
5	19 33 42.23	21 52 47.8	.6365894	14 37.0	284 49 18.9	0 8 15.0	.7139251
6	19 33 22.29	21 53 41.9	.6356134	14 32.7	284 54 21.0	0 8 21.9	.7138936
7	19 33 1.68	21 54 37.3	.6346583	14 28.4	284 59 23.1	0 8 28.7	.7138620
8	19 32 40.41	21 55 34.0	.6337247	14 24.1	285 4 25.3	0 8 35.6	.7138305
9	19 32 18.49	21 56 31.9	.6328130	14 19.9	285 9 27.5	0 8 42.5	.7138000
10	19 31 55.95	21 57 31.1	.6319238	14 15.6	285 14 29.7	0 8 49.4	.7137745
11	19 31 32.79	21 58 31.4	.6310577	14 11.3	285 19 32.0	0 8 56.2	.7137430
12	19 31 9.03	21 59 32.8	.6302150	14 6.9	285 24 34.4	0 9 3.1	.7137125
13	19 30 44.68	22 0 35.2	.6293962	14 2.6	285 29 36.7	0 9 10.0	.7136820
14	19 30 19.77	22 1 38.5	.6286017	13 58.2	285 34 39.1	0 9 16.9	.7136515
15	19 29 54.30	22 2 42.8	.6278320	13 53.9	285 39 41.6	0 9 23.7	.7136210
16	19 29 28.29	22 3 48.0	.6270874	13 49.6	285 44 44.1	0 9 30.6	.7135905
17	19 29 1.77	22 4 53.9	.6263684	13 45.2	285 49 46.6	0 9 37.5	.7135597
18	19 28 34.74	22 6 0.6	.6256754	13 40.8	285 54 49.2	0 9 44.4	.7135291
19	19 28 7.22	22 7 8.0	.6250086	13 36.4	285 59 51.9	0 9 51.2	.7134984
20	19 27 39.24	22 8 16.1	.6243684	13 32.0	286 4 54.5	0 9 58.1	.7134678
21	19 27 10.81	22 9 24.8	.6237552	13 27.6	286 9 57.2	0 10 5.0	.7134372
22	19 26 41.95	22 10 34.0	.6231693	13 23.2	286 15 0.0	0 10 11.9	.7134066
23	19 26 12.68	22 11 43.8	.6226109	13 18.8	286 20 2.8	0 10 18.7	.7133759
24	19 25 43.01	22 12 54.0	.6220803	13 14.3	286 25 5.6	0 10 25.6	.7133453
25	19 25 13.97	22 14 4.6	.6215780	13 9.9	286 30 8.5	0 10 32.5	.7133147
26	19 24 42.57	22 15 15.6	.6211043	13 5.4	286 35 11.5	0 10 39.3	.7132841
27	19 24 11.83	22 16 26.8	.6206594	13 1.0	286 40 14.4	0 10 46.2	.7132534
28	19 23 40.77	22 17 38.2	.6202436	12 56.6	286 45 17.4	0 10 53.1	.7132228
29	19 23 9.42	22 18 49.8	.6198572	12 52.2	286 50 20.5	0 11 0.0	.7131922
30	19 22 37.79	22 20 1.4	.6195005	12 47.7	286 55 23.6	0 11 6.8	.7131616
31	19 22 5.91	S. 22 21 13.2	0.6191737	12 43.3	287 0 26.7	S. 0 11 13.7	0.7131310

JUNE, 1842.

At Transit over the Meridian of Greenwich.

Day of Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi- diameter.	Hor. Par.
	^h ^m ^s	^s	^s	^o ['] ["]	["]	["]	["]
1	19 34 44.49	- 0.72	1.65	S. 21 49 55.9	- 2.0	21.1	2.0
2	19 34 26.96	0.75	1.65	21 50 44.9	2.1	21.1	2.0
3	19 34 8.72	0.77	1.65	21 51 35.4	2.1	21.2	2.0
4	19 33 49.78	0.80	1.65	21 52 27.4	2.2	21.3	2.0
5	19 33 30.16	0.83	1.66	21 53 20.8	2.3	21.4	2.0
6	19 33 9.87	0.86	1.66	21 54 15.5	2.3	21.4	2.0
7	19 32 48.92	0.89	1.67	21 55 11.5	2.4	21.5	2.0
8	19 32 27.33	0.91	1.68	21 56 8.8	2.4	21.6	2.0
9	19 32 5.10	0.94	1.68	21 57 7.2	2.5	21.6	2.0
10	19 31 42.26	0.96	1.68	21 58 6.9	2.5	21.6	2.0
11	19 31 18.32	0.99	1.68	21 59 7.7	2.6	21.7	2.0
12	19 30 54.78	1.01	1.69	22 0 9.4	2.6	21.7	2.0
13	19 30 30.17	1.04	1.69	22 1 12.2	2.6	21.7	2.0
14	19 30 5.01	1.06	1.69	22 2 16.0	2.7	21.8	2.0
15	19 29 39.30	1.08	1.69	22 3 20.6	2.7	21.8	2.0
16	19 29 13.07	1.10	1.70	22 4 26.0	2.7	21.8	2.0
17	19 28 46.34	1.12	1.70	22 5 32.2	2.8	21.9	2.0
18	19 28 19.12	1.14	1.70	22 6 39.1	2.8	21.9	2.0
19	19 27 51.41	1.16	1.71	22 7 46.7	2.8	22.0	2.0
20	19 27 23.26	1.18	1.71	22 8 54.9	2.9	22.0	2.0
21	19 26 54.67	1.20	1.71	22 10 3.6	2.9	22.0	2.0
22	19 26 25.67	1.22	1.71	22 11 12.9	2.9	22.1	2.0
23	19 25 56.27	1.23	1.72	22 12 22.7	2.9	22.1	2.0
24	19 25 26.48	1.25	1.72	22 13 32.9	2.9	22.1	2.0
25	19 24 56.33	1.26	1.72	22 14 43.5	2.9	22.1	2.1
26	19 24 25.84	1.28	1.72	22 15 54.4	3.0		2.1
27	19 23 55.02	1.29	1.72	22 17 5.5	?		2.1
28	19 23 23.90	1.30	1.72	22 18 16.8			2.1
29	19 22 52.49	1.31	1.72	22 19 28.2			2.1
30	19 22 20.82	1.32	1.73	22 20 39.7			2.1
31	19 21 48.91	- 1.33	1.73	S. 22 21 51.2	-		2.1

JUNE, 1842.

MEAN TIME.

JUNE, 1842.

JUPITER.

Pass over the Meridian of Greenwich.

Day of the Month.	Geocentric.			Meridian Passage.	True Apparent Declination.	Variation of Declination in 1 Hour of Time.	Semi-diameter.	Hor. Par.
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.					
	Noon.	Noon.	Noon.					
1	19 34 55.06	S. 21 49 25.9	0.6406918	14 14				
2	19 34 37.92	21 50 14.1	.6396376	13 59				
3	19 34 20.06	21 51 3.9	.6386020	13 49				
4	19 34 1.49	21 51 55.1	.63758	13 39				
5	19 33 42.23	21 52 47.8	.636	13 29				
6	19 33 22.29	21 53 41.9	.635	13 19				
7	19 33 1.68	21 54 37.3		13 10				
8	19 32 40.41	21 55 34.0		13 0				
9	19 32 18.49	21 56 31.		12 50				
10	19 31 55.95	21 57		12 40				
11	19 31 32.79	21 57		12 30				
12	19 31 9.03	21 57		12 20				
13	19 30 44.68	21 57		12 10				
14	19 30 19.77	21 57		12 0				
15	19 29 54.30	21 57		11 50				
16	19 29 28.	21 57	.6179634	11 40.5	288 6 11.3	0 12 36.1	.712764	
17	19 29	21 57	.6181305	11 31.6	288 21 22.6	0 12 43.0	.712734	
18	19 28	22 40 49.7	.6183280	11 27.1	288 26 26.5	0 12 49.8	.7127038	
19	19	22 41 53.6	.6185559	11 22.7	288 31 30.4	0 12 56.7	.7126733	
20	19 15.65	22 42 56.6	.6188140	11 18.2	288 36 34.3	0 13 3.5	.7126429	
21	19 11 43.49	22 43 58.8	.6191021	11 13.8	288 41 38.3	0 13 10.4	.7126124	
22	19 11 11.56	22 45 0.1	.6194199	11 9.3	288 46 42.3	0 13 17.2	.7125820	
23	19 10 39.87	22 46 0.4	.6197672	11 4.9	288 51 46.3	0 13 24.1	.7125515	
24	19 10 8.44	22 46 59.8	.6201438	11 0.4	288 56 50.4	0 13 31.0	.7125211	
25	19 9 37.30	22 47 58.2	.6205496	10 56.0	289 1 54.6	0 13 37.8	.7124907	
26	19 9 6.47	22 48 55.6	.6209842	10 51.5	289 6 58.8	0 13 44.7	.7124603	
27	19 8 35.97	22 49 52.0	.6214475	10 47.1	289 12 3.0	0 13 51.5	.7124298	
28	19 8 5.81	22 50 47.4	.6219391	10 42.7	289 17 7.2	0 13 58.4	.7123994	
29	19 7 36.03	22 51 41.7	.6224588	10 38.3	289 22 11.5	0 14 5.2	.7123690	
30	19 7 6.63	22 52 35.0	.6230064	10 33.9	289 27 15.9	0 14 12.1	.7123386	
31	19 6 37.65	22 53 27.1	.6235814	10 29.5	289 32 20.3	0 14 18.9	.7123082	
32	19 6 9.10	22 54 18.1	0.6241835	10 25.1	289 37 24.7	0 14 25.8	.7122778	
33	19 5 41.00	S. 22 54 18.1	0.6241835	10 25.1	289 37 24.7	S. 0 14 32.6	.7122474	
34	19 5 11.00					0 14 39.5	.7122170	
35	19 4 41.00					0 14 46.3	0.7121867	

JULY, 1842.

At Transit over the Meridian of Greenwich.

JUPITER.
 JULY, 1842.
 Greenwich.

Variation of Right Ascension. Hour of Day.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
	1 ^s 73	S. 22 21 51 ^s 2	— 3 ^s 0	22 ^s 3	2 ^s 1
	1 ^s 73	22 23 2 ^s 7	3 ^s 0	22 ^s 3	2 ^s 1
	1 ^s 73	22 24 14 ^s 1	3 ^s 0	22 ^s 3	2 ^s 1
	1 ^s 73	22 25 25 ^s 3	3 ^s 0	22 ^s 3	2 ^s 1
	1 ^s 73	22 26 36 ^s 4	3 ^s 0	22 ^s 3	2 ^s 1
	73	22 27 47 ^s 3	2 ^s 9	22 ^s 3	2 ^s 1
		22 28 57 ^s 9	2 ^s 9	22 ^s 3	2 ^s 1
		22 30 8 ^s 1	2 ^s 9	22 ^s 3	2 ^s 1
		22 31 17 ^s 9	2 ^s 9	22 ^s 3	2 ^s 1
		22 32 27 ^s 3	2 ^s 9	22 ^s 3	2 ^s 1
	1 ^s 74	22 33 36 ^s 3	2 ^s 9	22 ^s 3	2 ^s 1
1 ^s 37	1 ^s 75	22 34 44 ^s 8	2 ^s 8	22 ^s 3	2 ^s 1
	1 ^s 37	22 35 52 ^s 6	2 ^s 8	22 ^s 3	2 ^s 1
	1 ^s 37	22 36 59 ^s 6	2 ^s 8	22 ^s 3	2 ^s 1
	1 ^s 36	22 38 5 ^s 8	2 ^s 7	22 ^s 3	2 ^s 1
15	19 15 73	22 39 11 ^s 2	2 ^s 7	22 ^s 3	2 ^s 1
16	19 14 42 86	22 40 16 ^s 0	2 ^s 7	22 ^s 3	2 ^s 1
17	19 14 10 08	22 41 20 ^s 1	2 ^s 7	22 ^s 3	2 ^s 1
18	19 13 37 41	22 42 23 ^s 4	2 ^s 6	22 ^s 3	2 ^s 1
19	19 13 4 89	22 43 25 ^s 9	2 ^s 6	22 ^s 3	2 ^s 1
20	19 12 32 53	22 44 27 ^s 4	2 ^s 5	22 ^s 3	2 ^s 1
21	19 12 0 37	22 45 28 ^s 1	2 ^s 5	22 ^s 3	2 ^s 1
22	19 11 28 48	22 46 27 ^s 8	2 ^s 5	22 ^s 2	2 ^s 1
23	19 10 56 70	22 47 26 ^s 6	2 ^s 4	22 ^s 2	2 ^s 1
24	19 10 25 23	22 48 24 ^s 3	2 ^s 4	22 ^s 2	2 ^s 1
25	19 9 54 03	22 49 21 ^s 1	2 ^s 3	22 ^s 2	2 ^s 1
26	19 9 23 19	22 50 16 ^s 9	2 ^s 3	22 ^s 2	2 ^s 1
27	19 8 52 53	22 51 11 ^s 6	2 ^s 3	22 ^s 1	2 ^s 1
28	19 8 22 28	22 52 5 ^s 3	2 ^s 2	22 ^s 1	2 ^s 1
29	19 7 52 38	22 52 57 ^s 9	2 ^s 2	22 ^s 1	2 ^s 1
30	19 7 22 86	22 53 49 ^s 4	2 ^s 1	22 ^s 0	2 ^s 1
31	19 6 53 74				
32	19 6 25 04				
	19 5 56 77				
	19 5 28 96	S. 22 54 39 ^s 8	— 2 ^s 1	22 ^s 0	

371

JULY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	h m s 19 22 5·91	S. 22 21 13·2	0·6191737	12 43·3	287 0 26·7	S. 0 11 13·7	0·7131310
2	19 21 33·79	22 22 24·9	·6188770	12 38·8	287 5 29·9	0 11 20·6	·7131004
3	19 21 1·47	22 23 36·5	·6186106	12 34·3	287 10 33·1	0 11 27·4	·7130698
4	19 20 28·96	22 24 48·1	·6183748	12 29·8	287 15 36·4	0 11 34·3	·7130392
5	19 19 56·28	22 25 59·5	·6181697	12 25·3	287 20 39·7	0 11 41·2	·7130087
6	19 19 23·47	22 27 10·7	·6179955	12 20·8	287 25 43·1	0 11 48·0	·7129782
7	19 18 50·54	22 28 21·7	·6178522	12 16·3	287 30 46·4	0 11 54·9	·7129477
8	19 18 17·53	22 29 32·3	·6177400	12 11·8	287 35 49·9	0 12 1·8	·7129171
9	19 17 44·45	22 30 42·6	·6176589	12 7·4	287 40 53·3	0 12 8·6	·7128866
10	19 17 11·33	22 31 52·4	·6176090	12 2·9	287 45 56·8	0 12 15·5	·7128561
11	19 16 38·20	22 33 1·9	·6175904	11 58·4	287 51 0·4	0 12 22·4	·7128257
12	19 16 5·09	22 34 10·9	·6176030	11 53·9	287 56 4·0	0 12 29·2	·7127952
13	19 15 32·01	22 35 19·2	·6176466	11 49·4	288 1 7·7	0 12 36·1	·7127647
14	19 14 58·99	22 36 26·8	·6177213	11 44·9	288 6 11·3	0 12 43·0	·7127342
15	19 14 26·05	22 37 33·6	·6178270	11 40·5	288 11 15·1	0 12 49·8	·7127038
16	19 13 53·23	22 38 39·6	·6179634	11 36·0	288 16 18·8	0 12 56·7	·7126733
17	19 13 20·54	22 39 45·0	·6181305	11 31·6	288 21 22·6	0 13 3·5	·7126429
18	19 12 48·01	22 40 49·7	·6183280	11 27·1	288 26 26·5	0 13 10·4	·7126124
19	19 12 15·65	22 41 53·6	·6185559	11 22·7	288 31 30·4	0 13 17·2	·7125820
20	19 11 43·49	22 42 56·6	·6188140	11 18·2	288 36 34·3	0 13 24·1	·7125515
21	19 11 11·56	22 43 58·8	·6191021	11 13·8	288 41 38·3	0 13 31·0	·7125211
22	19 10 39·87	22 45 0·1	·6194199	11 9·3	288 46 42·3	0 13 37·8	·7124907
23	19 10 8·44	22 46 0·4	·6197672	11 4·9	288 51 46·3	0 13 44·7	·7124603
24	19 9 37·30	22 46 59·8	·6201438	11 0·4	288 56 50·4	0 13 51·5	·7124298
25	19 9 6·47	22 47 58·2	·6205496	10 56·0	289 1 54·6	0 13 58·4	·7123994
26	19 8 35·97	22 48 55·6	·6209842	10 51·5	289 6 58·8	0 14 5·2	·7123690
27	19 8 5·81	22 49 52·0	·6214475	10 47·1	289 12 3·0	0 14 12·1	·7123386
28	19 7 36·03	22 50 47·4	·6219391	10 42·7	289 17 7·2	0 14 18·9	·7123082
29	19 7 6·63	22 51 41·7	·6224588	10 38·3	289 22 11·5	0 14 25·8	·7122778
30	19 6 37·65	22 52 35·0	·6230064	10 33·9	289 27 15·9	0 14 32·6	·7122474
31	19 6 9·10	22 53 27·1	·6235814	10 29·5	289 32 20·3	0 14 39·5	·7122170
32	19 5 41·00	S. 22 54 18·1	0·6241835	10 25·1	289 37 24·7	S. 0 14 46·3	0·7121867

JULY, 1842.

At Transit over the Meridian of Greenwich.

Day of Month.	Apparent Right Ascension.			Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.			Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
	h	m	s	"	"	°	'	"	"	"	"
1	19	21	48.91	- 1.33	1.73	S. 22	21	51.2	- 3.0	22.3	2.1
2	19	21	16.79	1.34	1.73	22	23	2.7	3.0	22.3	2.1
3	19	20	44.47	1.35	1.73	22	24	14.1	3.0	22.3	2.1
4	19	20	11.96	1.36	1.73	22	25	25.3	3.0	22.3	2.1
5	19	19	39.31	1.36	1.73	22	26	36.4	3.0	22.3	2.1
6	19	19	6.54	1.37	1.73	22	27	47.3	2.9	22.3	2.1
7	19	18	33.67	1.37	1.73	22	28	57.9	2.9	22.3	2.1
8	19	18	0.73	1.37	1.74	22	30	8.1	2.9	22.3	2.1
9	19	17	27.73	1.38	1.74	22	31	17.9	2.9	22.3	2.1
10	19	16	54.70	1.38	1.74	22	32	27.3	2.9	22.3	2.1
11	19	16	21.68	1.38	1.74	22	33	36.3	2.9	22.3	2.1
12	19	15	48.68	1.37	1.75	22	34	44.8	2.8	22.3	2.1
13	19	15	15.73	1.37	1.75	22	35	52.6	2.8	22.3	2.1
14	19	14	42.86	1.37	1.75	22	36	59.6	2.8	22.3	2.1
15	19	14	10.08	1.36	1.75	22	38	5.8	2.7	22.3	2.1
16	19	13	37.41	1.36	1.75	22	39	11.2	2.7	22.3	2.1
17	19	13	4.89	1.35	1.75	22	40	16.0	2.7	22.3	2.1
18	19	12	32.53	1.34	1.74	22	41	20.1	2.7	22.3	2.1
19	19	12	0.37	1.34	1.74	22	42	23.4	2.6	22.3	2.1
20	19	11	28.42	1.33	1.74	22	43	25.9	2.6	22.3	2.1
21	19	10	56.70	1.32	1.74	22	44	27.4	2.5	22.3	2.1
22	19	10	25.23	1.31	1.74	22	45	28.1	2.5	22.3	2.1
23	19	9	54.03	1.29	1.74	22	46	27.8	2.5	22.2	2.1
24	19	9	23.12	1.28	1.74	22	47	26.6	2.4	22.2	2.1
25	19	8	52.53	1.27	1.74	22	48	24.3	2.4	22.2	2.1
26	19	8	22.28	1.25	1.74	22	49	21.1	2.3	22.2	2.1
27	19	7	52.38	1.24	1.74	22	50	16.9	2.3	22.2	2.0
28	19	7	22.86	1.22	1.73	22	51	11.6	2.3	22.1	2.0
29	19	6	53.74	1.20	1.73	22	52	5.3	2.2	22.1	2.0
30	19	6	23.04	1.19	1.73	22	52	57.9	2.2	22.1	2.0
31	19	5	56.77	1.17	1.72	22	53	49.4	2.1	22.0	2.0
32	19	5	28.96	- 1.15	1.72	S. 22	54	39.8	- 2.1	22.0	2.0

AUGUST, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	19 5 41 ^{h m s} 00	S. 22 54 18 ^{o ' " N} 1	0.6241835	10 25 ^{h m} 1	289 37 24 ^{o ' " S} 7	0 14 46 ^{o ' " N} 3	0.7121867
2	19 5 13 ^{h m s} 37	22 55 8 ^{o ' "} 0	.6248124	10 20 ^{h m} 7	289 42 29 ^{o ' "} 2	0 14 53 ^{o ' "} 2	.7121563
3	19 4 46 ^{h m s} 23	22 55 56 ^{o ' "} 8	.6254678	10 16 ^{h m} 3	289 47 33 ^{o ' "} 7	0 15 0 ^{o ' "} 0	.7121259
4	19 4 19 ^{h m s} 60	22 56 44 ^{o ' "} 4	.6261493	10 12 ^{h m} 0	289 52 38 ^{o ' "} 2	0 15 6 ^{o ' "} 8	.7120955
5	19 3 53 ^{h m s} 50	22 57 30 ^{o ' "} 8	.6268564	10 7 ^{h m} 6	289 57 42 ^{o ' "} 8	0 15 13 ^{o ' "} 7	.7120651
6	19 3 27 ^{h m s} 96	22 58 16 ^{o ' "} 0	.6273987	10 3 ^{h m} 3	290 2 47 ^{o ' "} 3	0 15 20 ^{o ' "} 5	.7120347
7	19 3 2 ^{h m s} 98	22 59 0 ^{o ' "} 0	.6283458	9 58 ^{h m} 9	290 7 52 ^{o ' "} 1	0 15 27 ^{o ' "} 4	.7120044
8	19 2 38 ^{h m s} 58	22 59 42 ^{o ' "} 8	.6291272	9 54 ^{h m} 6	290 12 56 ^{o ' "} 9	0 15 34 ^{o ' "} 2	.7119740
9	19 2 14 ^{h m s} 79	23 0 24 ^{o ' "} 3	.6299324	9 50 ^{h m} 2	290 18 1 ^{o ' "} 6	0 15 41 ^{o ' "} 0	.7119436
10	19 1 51 ^{h m s} 62	23 1 4 ^{o ' "} 6	.6307610	9 45 ^{h m} 9	290 23 6 ^{o ' "} 4	0 15 47 ^{o ' "} 9	.7119132
11	19 1 29 ^{h m s} 09	23 1 43 ^{o ' "} 6	.6316124	9 41 ^{h m} 6	290 28 11 ^{o ' "} 2	0 15 54 ^{o ' "} 7	.7118829
12	19 1 7 ^{h m s} 21	23 2 21 ^{o ' "} 4	.6324861	9 37 ^{h m} 3	290 33 16 ^{o ' "} 1	0 16 1 ^{o ' "} 5	.7118525
13	19 0 45 ^{h m s} 99	23 2 58 ^{o ' "} 0	.6333816	9 33 ^{h m} 0	290 38 21 ^{o ' "} 0	0 16 8 ^{o ' "} 4	.7118222
14	19 0 23 ^{h m s} 44	23 3 33 ^{o ' "} 3	.6342983	9 28 ^{h m} 8	290 43 26 ^{o ' "} 0	0 16 15 ^{o ' "} 2	.7117919
15	19 0 5 ^{h m s} 57	23 4 7 ^{o ' "} 4	.6352358	9 24 ^{h m} 5	290 48 31 ^{o ' "} 0	0 16 22 ^{o ' "} 0	.7117616
16	18 59 46 ^{h m s} 40	23 4 40 ^{o ' "} 2	.6361934	9 20 ^{h m} 3	290 53 36 ^{o ' "} 1	0 16 28 ^{o ' "} 8	.7117313
17	18 59 27 ^{h m s} 93	23 5 11 ^{o ' "} 8	.6371706	9 16 ^{h m} 1	290 58 41 ^{o ' "} 2	0 16 35 ^{o ' "} 7	.7117009
18	18 59 10 ^{h m s} 18	23 5 42 ^{o ' "} 2	.6381670	9 11 ^{h m} 9	291 3 46 ^{o ' "} 3	0 16 42 ^{o ' "} 5	.7116706
19	18 58 53 ^{h m s} 16	23 6 11 ^{o ' "} 4	.6391820	9 7 ^{h m} 7	291 8 51 ^{o ' "} 4	0 16 49 ^{o ' "} 3	.7116403
20	18 58 36 ^{h m s} 87	23 6 39 ^{o ' "} 3	.6402151	9 3 ^{h m} 4	291 13 56 ^{o ' "} 7	0 16 56 ^{o ' "} 1	.7116100
21	18 58 21 ^{h m s} 33	23 7 6 ^{o ' "} 0	.6412659	8 59 ^{h m} 2	291 19 1 ^{o ' "} 9	0 17 2 ^{o ' "} 9	.7115797
22	18 58 6 ^{h m s} 54	23 7 31 ^{o ' "} 5	.6423337	8 55 ^{h m} 1	291 24 7 ^{o ' "} 2	0 17 9 ^{o ' "} 8	.7115494
23	18 57 52 ^{h m s} 32	23 7 55 ^{o ' "} 8	.6434182	8 50 ^{h m} 9	291 29 12 ^{o ' "} 5	0 17 16 ^{o ' "} 6	.7115191
24	18 57 39 ^{h m s} 26	23 8 18 ^{o ' "} 9	.6445188	8 46 ^{h m} 8	291 34 17 ^{o ' "} 9	0 17 23 ^{o ' "} 4	.7114888
25	18 57 26 ^{h m s} 78	23 8 40 ^{o ' "} 8	.6456350	8 42 ^{h m} 6	291 39 23 ^{o ' "} 3	0 17 30 ^{o ' "} 2	.7114585
26	18 57 15 ^{h m s} 08	23 9 1 ^{o ' "} 4	.6467663	8 38 ^{h m} 5	291 44 28 ^{o ' "} 8	0 17 37 ^{o ' "} 0	.7114283
27	18 57 4 ^{h m s} 17	23 9 20 ^{o ' "} 9	.6479128	8 34 ^{h m} 4	291 49 34 ^{o ' "} 3	0 17 43 ^{o ' "} 8	.7113980
28	18 56 54 ^{h m s} 05	23 9 39 ^{o ' "} 1	.6490725	8 30 ^{h m} 4	291 54 39 ^{o ' "} 8	0 17 50 ^{o ' "} 7	.7113677
29	18 56 44 ^{h m s} 74	23 9 56 ^{o ' "} 2	.6502463	8 26 ^{h m} 3	291 59 45 ^{o ' "} 4	0 17 57 ^{o ' "} 5	.7113375
30	18 56 36 ^{h m s} 23	23 10 12 ^{o ' "} 0	.6514333	8 22 ^{h m} 3	292 4 51 ^{o ' "} 1	0 18 4 ^{o ' "} 3	.7113072
31	18 56 28 ^{h m s} 53	23 10 26 ^{o ' "} 7	.6526329	8 18 ^{h m} 2	292 9 56 ^{o ' "} 7	0 18 11 ^{o ' "} 1	.7112770
32	18 56 21 ^{h m s} 66	S. 23 10 40 ^{o ' "} 2	0.6538445	8 14 ^{h m} 1	292 15 2 ^{o ' "} 4	S. 0 18 17 ^{o ' "} 9	0.7112467

AUGUST, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.			Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.			Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
	h	m	s	"	"	°	'	"	"	"	"
1	19	5	28.96	- 1.15	1.72	S. 22	54	39.8	- 2.1	22.0	2.0
2	19	5	1.63	1.13	1.72	22	55	29.1	2.0	22.0	2.0
3	19	4	34.78	1.11	1.72	22	56	17.2	2.0	22.0	2.0
4	19	4	8.45	1.09	1.72	22	57	4.1	1.9	21.9	2.0
5	19	3	42.66	1.06	1.72	22	57	49.9	1.9	21.9	2.0
6	19	3	17.42	1.04	1.71	22	58	34.5	1.8	21.9	2.0
7	19	2	52.76	1.02	1.71	22	59	17.8	1.8	21.8	2.0
8	19	2	28.69	0.99	1.71	22	59	59.9	1.7	21.8	2.0
9	19	2	5.22	0.96	1.71	23	0	40.8	1.7	21.8	2.0
10	19	1	42.38	0.94	1.70	23	1	20.5	1.6	21.7	2.0
11	19	1	20.18	0.91	1.70	23	1	58.9	1.6	21.7	2.0
12	19	0	58.62	0.88	1.70	23	2	36.1	1.5	21.6	2.0
13	19	0	37.72	0.86	1.69	23	3	12.1	1.5	21.5	2.0
14	19	0	17.50	0.83	1.69	23	3	46.8	1.4	21.5	2.0
15	18	59	57.97	0.80	1.68	23	4	20.3	1.4	21.4	2.0
16	18	59	39.13	0.77	1.68	23	4	52.6	1.3	21.4	2.0
17	18	59	20.99	0.74	1.67	23	5	23.6	1.3	21.3	2.0
18	18	59	3.57	0.71	1.67	23	5	53.4	1.2	21.3	2.0
19	18	58	46.87	0.68	1.66	23	6	22.0	1.2	21.2	2.0
20	18	58	30.91	0.65	1.66	23	6	49.4	1.1	21.2	2.0
21	18	58	15.70	0.62	1.66	23	7	15.6	1.1	21.1	2.0
22	18	58	1.24	0.59	1.65	23	7	40.6	1.0	21.0	2.0
23	18	57	47.54	0.56	1.65	23	8	4.3	1.0	21.0	1.9
24	18	57	34.60	0.52	1.64	23	8	26.9	0.9	21.0	1.9
25	18	57	22.44	0.49	1.64	23	8	48.3	0.8	21.0	1.9
26	18	57	11.06	0.46	1.63	23	9	8.4	0.7	21.0	1.9
27	18	57	0.46	0.43	1.63	23	9	27.4	0.6	21.0	1.9
28	18	56	50.66	0.39	1.62	23	9	44.1	0.5	21.0	1.9
29	18	56	41.65	0.36	1.62	23	10	1.1	0.4	21.0	1.9
30	18	56	33.45	0.32	1.62	23	10	1.1	0.3	21.0	1.9
31	18	56	26.06	0.29	1.61	23	10	3.1	0.2	21.0	1.9
32	18	56	19.49	- 0.26	1.61	S. 23	10	3.1	0.1	21.0	1.9

SEPTEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
1	18 56 21.66	S. 23 10 40.2	0.6538445	8 14.1	292 15 2.4	S. 0 18 17.9	0.7112467
2	18 56 15.61	23 10 52.5	.6550677	8 10.0	292 20 8.2	0 18 24.7	.7112165
3	18 56 10.39	23 11 3.6	.6563020	8 6.0	292 25 14.0	0 18 31.5	.7111863
4	18 56 6.00	23 11 13.6	.6575468	8 2.0	292 30 19.8	0 18 38.3	.7111561
5	18 56 2.45	23 11 22.4	.6588015	7 58.0	292 35 25.7	0 18 45.1	.7111259
6	18 55 59.74	23 11 29.9	.6600657	7 54.0	292 40 31.6	0 18 51.9	.7110957
7	18 55 57.86	23 11 36.3	.6613387	7 50.1	292 45 37.6	0 18 58.7	.7110655
8	18 55 56.82	23 11 41.5	.6626201	7 46.1	292 50 43.6	0 19 5.5	.7110353
9	18 55 56.62	23 11 45.5	.6639093	7 42.2	292 55 49.6	0 19 12.3	.7110051
10	18 55 57.26	23 11 48.2	.6652058	7 38.3	293 0 55.7	0 19 19.1	.7109749
11	18 55 58.74	23 11 49.8	.6665091	7 34.4	293 6 1.9	0 19 25.9	.7109448
12	18 56 1.06	23 11 50.2	.6678187	7 30.5	293 11 8.0	0 19 32.7	.7109146
13	18 56 4.22	23 11 49.5	.6691341	7 26.6	293 16 14.3	0 19 39.5	.7108844
14	18 56 8.21	23 11 47.5	.6704549	7 22.7	293 21 20.5	0 19 46.3	.7108543
15	18 56 13.03	23 11 44.4	.6717804	7 18.9	293 26 26.8	0 19 53.1	.7108241
16	18 56 18.69	23 11 40.1	.6731104	7 15.1	293 31 33.2	0 19 59.8	.7107940
17	18 56 25.17	23 11 34.7	.6744443	7 11.3	293 36 39.5	0 20 6.6	.7107639
18	18 56 32.47	23 11 28.1	.6757818	7 7.5	293 41 46.0	0 20 13.4	.7107338
19	18 56 40.59	23 11 20.3	.6771224	7 3.7	293 46 52.4	0 20 20.2	.7107037
20	18 56 49.53	23 11 11.4	.6784657	6 59.9	293 51 59.0	0 20 27.0	.7106736
21	18 56 59.27	23 11 1.3	.6798114	6 56.2	293 57 5.5	0 20 33.7	.7106435
22	18 57 9.83	23 10 50.0	.6811590	6 52.4	294 2 12.1	0 20 40.5	.7106134
23	18 57 21.18	23 10 37.6	.6825081	6 48.7	294 7 18.7	0 20 47.3	.7105833
24	18 57 33.34	23 10 23.9	.6838585	6 44.9	294 12 25.4	0 20 54.1	.7105532
25	18 57 46.30	23 10 9.1	.6852096	6 41.2	294 17 32.1	0 21 0.8	.7105231
26	18 58 0.05	23 9 53.1	.6865612	6 37.5	294 22 38.9	0 21 7.6	.7104931
27	18 58 14.59	23 9 35.9	.6879129	6 33.9	294 27 45.7	0 21 14.4	.7104630
28	18 58 29.92	23 9 17.4	.6892643	6 30.2	294 32 52.6	0 21 21.1	.7104330
29	18 58 46.04	23 8 57.7	.6906150	6 26.6	294 37 59.5	0 21 27.9	.7104029
30	18 59 2.93	23 8 36.8	.6919646	6 22.9	294 43 6.4	0 21 34.7	.7103729
31	18 59 20.59	S. 23 8 14.7	0.6933128	6 19.2	294 48 13.4	S. 0 21 41.4	0.7103429

SEPTEMBER, 1842.

At Transit over the Meridian of Greenwich.

Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	h m s 18 56 19.49	— 0.26	1.61	S. 23 10 44.4	— 0.5	20.6	1.9
2	18 56 13.74	0.22	1.60	23 10 56.3	0.5	20.5	1.9
3	18 56 8.82	0.19	1.60	23 11 7.0	0.4	20.4	1.9
4	18 56 4.78	0.15	1.60	23 11 16.5	0.4	20.4	1.9
5	18 56 1.46	0.12	1.59	23 11 24.9	0.3	20.3	1.9
6	18 55 59.03	0.08	1.59	23 11 32.0	0.3	20.2	1.9
7	18 55 57.44	0.05	1.58	23 11 38.0	0.2	20.2	1.9
8	18 55 56.67	— 0.01	1.57	23 11 42.8	0.2	20.1	1.9
9	18 55 56.73	+ 0.02	1.57	23 11 46.4	0.1	20.0	1.9
10	18 55 57.64	0.06	1.56	23 11 48.8	— 0.1	20.0	1.9
11	18 55 59.38	0.09	1.56	23 11 50.0	0.0	19.9	1.8
12	18 56 1.95	0.12	1.56	23 11 50.0	+ 0.1	19.9	1.8
13	18 56 5.36	0.16	1.55	23 11 48.9	0.1	19.8	1.8
14	18 56 9.60	0.19	1.54	23 11 46.5	0.1	19.8	1.8
15	18 56 14.66	0.23	1.54	23 11 43.1	0.2	19.7	1.8
16	18 56 20.55	0.26	1.53	23 11 38.5	0.2	19.7	1.8
17	18 56 27.27	0.30	1.53	23 11 32.7	0.3	19.6	1.8
18	18 56 34.80	0.33	1.53	23 11 25.8	0.3	19.6	1.8
19	18 56 43.14	0.36	1.52	23 11 17.7	0.4	19.5	1.8
20	18 56 52.29	0.40	1.52	23 11 8.5	0.4	19.4	1.8
21	18 57 2.24	0.43	1.51	23 10 58.1	0.5	19.4	1.8
22	18 57 13.00	0.46	1.51	23 10 46.5	0.5		1.8
23	18 57 24.55	0.50	1.50	23 10 33.8	0.6		1.8
24	18 57 36.90	0.53	1.50	23 10 19.8	0.6		1.8
25	18 57 50.05	0.56	1.49	23 10 4. "			1.8
26	18 58 3.98	0.60	1.49	23 9 48			1.8
27	18 58 18.70	0.63	1.48	23 9 36			1.8
28	18 58 34.21	0.66	1.48	23 9			1.8
29	18 58 50.49	0.69	1.47	23 8			
30	18 59 7.55	0.73	1.47	23 8			
31	18 59 25.37	+ 0.76	1.47	S. 23			

OCTOBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	18 59 20 ^{h m s} ·59	S. 23 8 14 ^{o ' "} ·7	·6933128	6 19 ^{h m} ·2	294 48 13 ^{o ' "} ·4	S. 0 21 41 ^{o ' "} ·4	0 ^o ·7103429
2	18 59 39 ^{h m s} ·03	23 7 51 ^{o ' "} ·3	·6946392	6 15 ^{h m} ·5	294 53 20 ^{o ' "} ·4	0 21 48 ^{o ' "} ·2	·7103129
3	18 59 58 ^{h m s} ·23	23 7 26 ^{o ' "} ·6	·6960034	6 11 ^{h m} ·9	294 58 27 ^{o ' "} ·5	0 21 55 ^{o ' "} ·0	·7102829
4	19 0 18 ^{h m s} ·19	23 7 0 ^{o ' "} ·7	·6973451	6 8 ^{h m} ·4	295 3 34 ^{o ' "} ·6	0 22 1 ^{o ' "} ·7	·7102529
5	19 0 38 ^{h m s} ·91	23 6 33 ^{o ' "} ·5	·6986838	6 4 ^{h m} ·9	295 8 41 ^{o ' "} ·7	0 22 8 ^{o ' "} ·5	·7102229
6	19 1 0 ^{h m s} ·37	23 6 5 ^{o ' "} ·0	·7000192	6 1 ^{h m} ·3	295 13 48 ^{o ' "} ·9	0 22 15 ^{o ' "} ·2	·7101929
7	19 1 22 ^{h m s} ·57	23 5 35 ^{o ' "} ·3	·7013510	5 57 ^{h m} ·7	295 18 56 ^{o ' "} ·2	0 22 22 ^{o ' "} ·0	·7101630
8	19 1 45 ^{h m s} ·50	23 5 4 ^{o ' "} ·2	·7026789	5 54 ^{h m} ·1	295 24 3 ^{o ' "} ·4	0 22 28 ^{o ' "} ·7	·7101330
9	19 2 9 ^{h m s} ·16	23 4 31 ^{o ' "} ·8	·7040024	5 50 ^{h m} ·6	295 29 10 ^{o ' "} ·8	0 22 35 ^{o ' "} ·5	·7101030
10	19 2 33 ^{h m s} ·54	23 3 58 ^{o ' "} ·2	·7053213	5 47 ^{h m} ·1	295 34 18 ^{o ' "} ·1	0 22 42 ^{o ' "} ·2	·7100731
11	19 2 58 ^{h m s} ·63	23 3 23 ^{o ' "} ·2	·7066352	5 43 ^{h m} ·6	295 39 25 ^{o ' "} ·5	0 22 49 ^{o ' "} ·0	·7100431
12	19 3 24 ^{h m s} ·43	23 2 46 ^{o ' "} ·9	·7079440	5 40 ^{h m} ·1	295 44 33 ^{o ' "} ·0	0 22 55 ^{o ' "} ·7	·7100133
13	19 3 50 ^{h m s} ·92	23 2 9 ^{o ' "} ·3	·7092473	5 36 ^{h m} ·6	295 49 40 ^{o ' "} ·5	0 23 2 ^{o ' "} ·4	·7099833
14	19 4 18 ^{h m s} ·10	23 1 30 ^{o ' "} ·3	·7105447	5 33 ^{h m} ·0	295 54 48 ^{o ' "} ·0	0 23 9 ^{o ' "} ·2	·7099534
15	19 4 45 ^{h m s} ·96	23 0 50 ^{o ' "} ·0	·7118359	5 29 ^{h m} ·5	295 59 55 ^{o ' "} ·6	0 23 15 ^{o ' "} ·9	·7099236
16	19 5 14 ^{h m s} ·49	23 0 8 ^{o ' "} ·3	·7131208	5 26 ^{h m} ·1	296 5 3 ^{o ' "} ·2	0 23 22 ^{o ' "} ·6	·7098937
17	19 5 43 ^{h m s} ·68	23 59 25 ^{o ' "} ·2	·7143994	5 22 ^{h m} ·7	296 10 10 ^{o ' "} ·9	0 23 29 ^{o ' "} ·4	·7098638
18	19 6 13 ^{h m s} ·53	23 58 40 ^{o ' "} ·8	·7156713	5 19 ^{h m} ·2	296 15 18 ^{o ' "} ·6	0 23 36 ^{o ' "} ·1	·7098339
19	19 6 44 ^{h m s} ·03	23 57 54 ^{o ' "} ·9	·7169364	5 15 ^{h m} ·8	296 20 26 ^{o ' "} ·4	0 23 42 ^{o ' "} ·8	·7098041
20	19 7 15 ^{h m s} ·17	23 57 7 ^{o ' "} ·7	·7181943	5 12 ^{h m} ·4	296 25 34 ^{o ' "} ·2	0 23 49 ^{o ' "} ·5	·7097742
21	19 7 46 ^{h m s} ·94	23 56 19 ^{o ' "} ·1	·7194447	5 9 ^{h m} ·0	296 30 42 ^{o ' "} ·0	0 23 56 ^{o ' "} ·2	·7097444
22	19 8 19 ^{h m s} ·34	23 55 29 ^{o ' "} ·0	·7206874	5 5 ^{h m} ·6	296 35 49 ^{o ' "} ·9	0 24 3 ^{o ' "} ·0	·7097145
23	19 8 52 ^{h m s} ·86	23 54 37 ^{o ' "} ·5	·7219224	5 2 ^{h m} ·9	296 40 57 ^{o ' "} ·8	0 24 9 ^{o ' "} ·7	·7096847
24	19 9 25 ^{h m s} ·99	23 53 44 ^{o ' "} ·6	·7231494	4 58 ^{h m} ·8	296 46 5 ^{o ' "} ·8	0 24 16 ^{o ' "} ·4	·7096549
25	19 10 0 ^{h m s} ·23	23 52 50 ^{o ' "} ·2	·7243682	4 55 ^{h m} ·5	296 51 13 ^{o ' "} ·8	0 24 23 ^{o ' "} ·1	·7096251
26	19 10 35 ^{h m s} ·07	23 51 54 ^{o ' "} ·3	·7255785	4 52 ^{h m} ·1	296 56 21 ^{o ' "} ·9	0 24 29 ^{o ' "} ·8	·7095953
27	19 11 10 ^{h m s} ·51	23 50 57 ^{o ' "} ·0	·7267803	4 48 ^{h m} ·8	297 1 30 ^{o ' "} ·0	0 24 36 ^{o ' "} ·5	·7095655
28	19 11 46 ^{h m s} ·53	23 49 58 ^{o ' "} ·1	·7279732	4 45 ^{h m} ·5	297 6 38 ^{o ' "} ·1	0 24 43 ^{o ' "} ·2	·7095357
29	19 12 23 ^{h m s} ·13	23 48 57 ^{o ' "} ·8	·7291571	4 42 ^{h m} ·2	297 11 46 ^{o ' "} ·3	0 24 49 ^{o ' "} ·9	·7095060
30	19 13 0 ^{h m s} ·31	23 47 55 ^{o ' "} ·9	·7303317	4 38 ^{h m} ·9	297 16 54 ^{o ' "} ·5	0 24 56 ^{o ' "} ·6	·7094762
31	19 13 38 ^{h m s} ·05	23 46 52 ^{o ' "} ·5	·7314969	4 35 ^{h m} ·5	297 22 2 ^{o ' "} ·8	0 25 3 ^{o ' "} ·3	·7094465
32	19 14 16 ^{h m s} ·34	S. 22 45 47 ^{o ' "} ·5	0 ^o ·7326523	4 32 ^{h m} ·2	297 27 11 ^{o ' "} ·1	S. 0 25 10 ^{o ' "} ·0	0 ^o ·7094167

OCTOBER, 1842.

At Transit over the Meridian of Greenwich.

Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 18 ^m 59 ^s 25·37	+ 0·76	1·47	S. 23 8 8·6	+ 1·0	18·8	1·7
2	18 59 43·96	0·79	1·46	23 7 44·9	1·0	18·7	1·7
3	19 0 3·31	0·82	1·45	23 7 20·0	1·1	18·6	1·7
4	19 0 23·41	0·85	1·45	23 6 53·8	1·1	18·6	1·7
5	19 0 44·27	0·88	1·44	23 6 26·3	1·2	18·5	1·7
6	19 1 5·87	0·92	1·44	23 5 57·5	1·2	18·5	1·7
7	19 1 28·20	0·95	1·44	23 5 27·5	1·3	18·5	1·7
8	19 1 51·25	0·98	1·43	23 4 56·2	1·3	18·4	1·7
9	19 2 15·03	1·01	1·43	23 4 23·6	1·4	18·4	1·7
10	19 2 39·52	1·04	1·43	23 3 49·7	1·4	18·3	1·7
11	19 3 4·72	1·06	1·42	23 3 14·5	1·5	18·2	1·7
12	19 3 30·62	1·09	1·42	23 2 38·0	1·5	18·2	1·7
13	19 3 57·21	1·12	1·41	23 2 0·2	1·6	18·1	1·7
14	19 4 24·48	1·15	1·41	23 1 21·0	1·7	18·1	1·7
15	19 4 52·42	1·18	1·41	23 0 40·5	1·7	18·0	1·7
16	19 5 21·03	1·21	1·40	22 59 58·6	1·8	17·9	1·7
17	19 5 50·31	1·23	1·40	22 59 15·3	1·8	17·9	1·7
18	19 6 20·24	1·26	1·39	22 58 30·7	1·9	17·8	1·6
19	19 6 50·81	1·29	1·39	22 57 44·6	1·9	17·7	1·6
20	19 7 22·01	1·31	1·38	22 56 57·2	2·0	17·7	1·6
21	19 7 53·84	1·34	1·38	22 56 8·4	2·1	17·6	1·6
22	19 8 26·30	1·37	1·37	22 55 18·1	2·1	17·6	1·6
23	19 8 59·37	1·39	1·37	22 54 26·4	2·2	17·6	1·6
24	19 9 33·05	1·42	1·37	22 53 33·3	2·2	17·6	1·6
25	19 10 7·33	1·44	1·36	22 52 38·7	2·2	17·6	1·6
26	19 10 42·21	1·47	1·36	22 51 42·7	2·2	17·6	1·6
27	19 11 17·68	1·49	1·36	22 50 45·2	2·2	17·6	1·6
28	19 11 53·73	1·51	1·35	22 49 46·1	2·2	17·6	1·6
29	19 12 30·36	1·54	1·35	22 48 45·6	2·2	17·6	1·6
30	19 13 7·57	1·56	1·35	22 47 43·6	2·2	17·6	1·6
31	19 13 45·33	1·58	1·34	22 46 40·0	2·2	17·6	1·6
32	19 14 23·64	+ 1·61	1·33	S. 22 45 34·9	+ 2·2	17·6	1·6

NOVEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	19 14 16 ^h 34 ^m	S. 22 45 47 ^s	0.7326523	4 32 ^h 2 ^m	297 27 11 ^o 1 ^m	S. 0 25 10 ^o 0 ^m	0.709416
2	19 14 55 ^h 19 ^m	22 44 41 ^s	.7337978	4 29 ^h 0 ^m	297 32 19 ^o 5 ^m	0 25 16 ^o 7 ^m	.709386
3	19 15 34 ^h 58 ^m	22 43 32 ^s	.7349332	4 25 ^h 7 ^m	297 37 27 ^o 9 ^m	0 25 23 ^o 4 ^m	.709357
4	19 16 14 ^h 51 ^m	22 42 23 ^s	.7360583	4 22 ^h 5 ^m	297 42 36 ^o 3 ^m	0 25 30 ^o 1 ^m	.709327
5	19 16 54 ^h 96 ^m	22 41 12 ^s	.7371729	4 19 ^h 2 ^m	297 47 44 ^o 8 ^m	0 25 36 ^o 7 ^m	.709297
6	19 17 35 ^h 92 ^m	22 39 59 ^s	.7382768	4 15 ^h 9 ^m	297 52 53 ^o 4 ^m	0 25 43 ^o 4 ^m	.709268
7	19 18 17 ^h 40 ^m	22 38 44 ^s	.7393700	4 12 ^h 6 ^m	297 58 2 ^o 0 ^m	0 25 50 ^o 1 ^m	.709238
8	19 18 59 ^h 38 ^m	22 37 28 ^s	.7404522	4 9 ^h 4 ^m	298 3 10 ^o 6 ^m	0 25 56 ^o 8 ^m	.709208
9	19 19 41 ^h 84 ^m	22 36 11 ^s	.7415232	4 6 ^h 2 ^m	298 8 19 ^o 3 ^m	0 26 3 ^o 4 ^m	.709179
10	19 20 24 ^h 79 ^m	22 34 51 ^s	.7425830	4 3 ^h 0 ^m	298 13 28 ^o 0 ^m	0 26 10 ^o 1 ^m	.709149
11	19 21 8 ^h 22 ^m	22 33 30 ^s	.7436314	3 59 ^h 8 ^m	298 18 36 ^o 7 ^m	0 26 16 ^o 8 ^m	.709119
12	19 21 52 ^h 11 ^m	22 32 8 ^s	.7446682	3 56 ^h 6 ^m	298 23 45 ^o 5 ^m	0 26 23 ^o 4 ^m	.709090
13	19 22 36 ^h 45 ^m	22 30 44 ^s	.7456934	3 53 ^h 3 ^m	298 28 54 ^o 4 ^m	0 26 30 ^o 1 ^m	.709060
14	19 23 21 ^h 24 ^m	22 29 18 ^s	.7467068	3 50 ^h 1 ^m	298 34 3 ^o 2 ^m	0 26 36 ^o 8 ^m	.709030
15	19 24 6 ^h 48 ^m	22 27 50 ^s	.7477083	3 47 ^h 0 ^m	298 39 12 ^o 2 ^m	0 26 43 ^o 4 ^m	.709001
16	19 24 52 ^h 14 ^m	22 26 21 ^s	.7486979	3 43 ^h 9 ^m	298 44 21 ^o 1 ^m	0 26 50 ^o 1 ^m	.708971
17	19 25 38 ^h 24 ^m	22 24 50 ^s	.7496755	3 40 ^h 7 ^m	298 49 30 ^o 2 ^m	0 26 56 ^o 7 ^m	.708942
18	19 26 24 ^h 75 ^m	22 23 18 ^s	.7506409	3 37 ^h 5 ^m	298 54 39 ^o 2 ^m	0 27 3 ^o 4 ^m	.708912
19	19 27 11 ^h 67 ^m	22 21 44 ^s	.7515941	3 34 ^h 3 ^m	298 59 48 ^o 3 ^m	0 27 10 ^o 0 ^m	.708883
20	19 27 59 ^h 00 ^m	22 20 8 ^s	.7525350	3 31 ^h 2 ^m	299 4 57 ^o 5 ^m	0 27 16 ^o 6 ^m	.708853
21	19 28 46 ^h 72 ^m	22 18 30 ^s	.7534635	3 28 ^h 0 ^m	299 10 6 ^o 6 ^m	0 27 23 ^o 3 ^m	.708824
22	19 29 34 ^h 83 ^m	22 16 51 ^s	.7543795	3 24 ^h 9 ^m	299 15 15 ^o 9 ^m	0 27 29 ^o 9 ^m	.708794
23	19 30 23 ^h 33 ^m	22 15 10 ^s	.7552829	3 21 ^h 7 ^m	299 20 25 ^o 2 ^m	0 27 36 ^o 5 ^m	.708765
24	19 31 12 ^h 21 ^m	22 13 27 ^s	.7561736	3 18 ^h 6 ^m	299 25 34 ^o 5 ^m	0 27 43 ^o 2 ^m	.708735
25	19 32 1 ^h 45 ^m	22 11 43 ^s	.7570514	3 15 ^h 5 ^m	299 30 43 ^o 8 ^m	0 27 49 ^o 8 ^m	.708706
26	19 32 51 ^h 06 ^m	22 9 57 ^s	.7579163	3 12 ^h 4 ^m	299 35 53 ^o 2 ^m	0 27 56 ^o 4 ^m	.708676
27	19 33 41 ^h 03 ^m	22 8 9 ^s	.7587682	3 9 ^h 3 ^m	299 41 2 ^o 7 ^m	0 28 3 ^o 0 ^m	.708647
28	19 34 31 ^h 35 ^m	22 6 19 ^s	.7596069	3 6 ^h 2 ^m	299 46 12 ^o 2 ^m	0 28 9 ^o 7 ^m	.708617
29	19 35 22 ^h 01 ^m	22 4 28 ^s	.7604323	3 3 ^h 1 ^m	299 51 21 ^o 7 ^m	0 28 16 ^o 3 ^m	.708588
30	19 36 13 ^h 00 ^m	22 2 35 ^s	.7612444	3 0 ^h 1 ^m	299 56 31 ^o 3 ^m	0 28 22 ^o 9 ^m	.708559
31	19 37 4 ^h 32 ^m	S. 22 0 40 ^s	0.7620430	2 57 ^h 0 ^m	300 1 40 ^o 9 ^m	S. 0 28 29 ^o 5 ^m	0.708529

NOVEMBER, 1842.

At Transit over the Meridian of Greenwich.

Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	h m s 19 14 23·64	+ 1·61	1·33	S. 22 45 34·9	+ 2·7	17·1	1·6
2	19 15 2·50	1·63	1·33	22 44 28·2	2·8	17·1	1·6
3	19 15 41·90	1·65	1·33	22 43 20·0	2·9	17·1	1·6
4	19 16 21·83	1·67	1·32	22 42 10·2	2·9	17·0	1·6
5	19 17 2·28	1·70	1·32	22 40 58·9	3·0	17·0	1·6
6	19 17 43·25	1·72	1·32	22 39 45·9	3·1	16·9	1·6
7	19 18 24·72	1·74	1·32	22 38 31·3	3·1	16·9	1·6
8	19 19 6·69	1·76	1·31	22 37 15·2	3·2	16·9	1·6
9	19 19 49·14	1·78	1·31	22 35 57·4	3·3	16·8	1·6
10	19 20 32·09	1·80	1·31	22 34 38·0	3·3	16·8	1·6
11	19 21 15·49	1·82	1·30	22 33 17·0	3·4	16·7	1·5
12	19 21 59·36	1·84	1·30	22 31 54·4	3·5	16·7	1·5
13	19 22 43·68	1·86	1·30	22 30 30·1	3·5	16·7	1·5
14	19 23 28·44	1·87	1·29	22 29 4·2	3·6	16·6	1·5
15	19 24 13·64	1·89	1·29	22 27 36·6	3·7	16·6	1·5
16	19 24 59·27	1·91	1·29	22 26 7·4	3·8	16·6	1·5
17	19 25 45·33	1·93	1·29	22 24 36·3	3·8	16·5	1·5
18	19 26 31·80	1·94	1·28	22 23 4·0	3·9	16·5	1·5
19	19 27 18·68	1·96	1·28	22 21 29·8	4·0	16·5	1·5
20	19 28 5·96	1·98	1·28	22 19 53·9	4·0	16·5	1·5
21	19 28 53·64	1·99	1·28	22 18 16·3	4·1	16·5	1·5
22	19 29 41·71	2·01	1·27	22 16 37·0	4·2	16·4	1·5
23	19 30 30·16	2·03	1·27	22 14 56·0	4·2	16·4	1·5
24	19 31 18·98	2·04	1·26	22 13 13·3	4·3	16·3	1·5
25	19 32 8·17	2·06	1·26	22 11 28·9	4·3	16·3	1·5
26	19 32 57·72	2·07	1·26	22 9 42·7	4·3	16·3	1·5
27	19 33 47·63	2·09	1·25	22 7 54·9	4·3	16·3	1·5
28	19 34 37·88	2·10	1·25	22 6 5·2	4·3	16·3	1·5
29	19 35 28·47	2·12	1·24	22 4 13·9	4·3	16·3	1·5
30	19 36 19·40	2·13	1·24	22 2 20·7	4·3	16·3	1·5
31	19 37 10·65	+ 2·14	1·24	S. 22 0 25·5	4·3	16·3	1·5

DECEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	<i>h m s</i>	<i>° ' "</i>		<i>h m</i>	<i>° ' "</i>	<i>° ' "</i>	
1	19 37 4 ^s 32	S. 22 0 40 ^s 2	0 ^s 7620430	2 57 ^m 0	300 1 40 ^s 9	S. 0 28 29 ^s 5	0 ^s 708529
2	19 37 55 ^s 96	21 58 43 ^s 6	7628280	2 54 ^m 0	300 6 50 ^s 6	0 28 36 ^s 1	708500
3	19 38 47 ^s 92	21 56 45 ^s 2	7635992	2 50 ^m 9	300 12 0 ^s 3	0 28 42 ^s 7	708471
4	19 39 40 ^s 18	21 54 45 ^s 0	7643567	2 47 ^m 9	300 17 10 ^s 0	0 28 49 ^s 3	708441
5	19 40 32 ^s 74	21 52 43 ^s 2	7651004	2 44 ^m 8	300 22 19 ^s 8	0 28 55 ^s 9	708412
6	19 41 25 ^s 58	21 50 39 ^s 5	7658301	2 41 ^m 7	300 27 29 ^s 7	0 29 2 ^s 5	708383
7	19 42 18 ^s 70	21 48 34 ^s 2	7665459	2 38 ^m 6	300 32 39 ^s 6	0 29 9 ^s 1	708354
8	19 43 12 ^s 09	21 46 27 ^s 1	7672475	2 35 ^m 6	300 37 49 ^s 5	0 29 15 ^s 7	708324
9	19 44 5 ^s 75	21 44 18 ^s 3	7679351	2 32 ^m 5	300 42 59 ^s 5	0 29 22 ^s 3	708295
10	19 44 59 ^s 67	21 42 7 ^s 7	7686085	2 29 ^m 5	300 48 9 ^s 5	0 29 28 ^s 8	708266
11	19 45 53 ^s 83	21 39 55 ^s 4	7692677	2 26 ^m 4	300 53 19 ^s 5	0 29 35 ^s 4	708237
12	19 46 48 ^s 23	21 37 41 ^s 4	7699127	2 23 ^m 4	300 58 29 ^s 6	0 29 42 ^s 0	708208
13	19 47 42 ^s 87	21 35 25 ^s 7	7705435	2 20 ^m 4	301 3 39 ^s 7	0 29 48 ^s 6	708179
14	19 48 37 ^s 73	21 33 8 ^s 3	7711600	2 17 ^m 4	301 8 49 ^s 9	0 29 55 ^s 1	708149
15	19 49 32 ^s 81	21 30 49 ^s 1	7717623	2 14 ^m 4	301 14 0 ^s 1	0 30 1 ^s 7	708120
16	19 50 28 ^s 11	21 28 28 ^s 3	7723502	2 11 ^m 4	301 19 10 ^s 4	0 30 8 ^s 3	708091
17	19 51 23 ^s 62	21 26 5 ^s 7	7729237	2 8 ^m 4	301 24 20 ^s 7	0 30 14 ^s 8	708062
18	19 52 19 ^s 32	21 23 41 ^s 4	7734829	2 5 ^m 4	301 29 31 ^s 0	0 30 21 ^s 4	708033
19	19 53 15 ^s 23	21 21 15 ^s 5	7740276	2 2 ^m 3	301 34 41 ^s 4	0 30 27 ^s 9	708004
20	19 54 11 ^s 33	21 18 47 ^s 9	7745579	1 59 ^m 3	301 39 51 ^s 8	0 30 34 ^s 5	707975
21	19 55 7 ^s 60	21 16 18 ^s 5	7750736	1 56 ^m 3	301 45 2 ^s 3	0 30 41 ^s 0	707946
22	19 56 4 ^s 06	21 13 47 ^s 5	7755747	1 53 ^m 3	301 50 12 ^s 8	0 30 47 ^s 6	707917
23	19 57 0 ^s 69	21 11 14 ^s 9	7760613	1 50 ^m 3	301 55 23 ^s 4	0 30 54 ^s 1	707888
24	19 57 57 ^s 49	21 8 40 ^s 5	7765331	1 47 ^m 3	302 0 34 ^s 0	0 31 0 ^s 6	707859
25	19 58 54 ^s 45	21 6 4 ^s 5	7769903	1 44 ^m 3	302 5 44 ^s 6	0 31 7 ^s 2	707830
26	19 59 51 ^s 56	21 3 26 ^s 8	7774328	1 41 ^m 4	302 10 55 ^s 3	0 31 13 ^s 7	707801
27	20 0 48 ^s 83	21 0 47 ^s 5	7778604	1 38 ^m 4	302 16 6 ^s 0	0 31 20 ^s 2	707772
28	20 1 46 ^s 23	20 58 6 ^s 6	7782732	1 35 ^m 5	302 21 16 ^s 8	0 31 26 ^s 8	707743
29	20 2 43 ^s 76	20 55 24 ^s 0	7786710	1 32 ^m 5	302 26 27 ^s 6	0 31 33 ^s 3	707714
30	20 3 41 ^s 42	20 52 39 ^s 8	7790539	1 29 ^m 5	302 31 38 ^s 4	0 31 39 ^s 8	707685
31	20 4 39 ^s 21	20 49 54 ^s 0	7794218	1 26 ^m 5	302 36 49 ^s 3	0 31 46 ^s 3	707657
32	20 5 37 ^s 11	S. 20 47 6 ^s 6	0 ^s 7797746	1 23 ^m 6	302 42 0 ^s 2	S. 0 31 52 ^s 8	0 ^s 707628

DECEMBER, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	19 37 10 ^s 65	+ 2 ^s 14	1 ^s 24	S. 22 0 25 ^s 9	+ 4 ^s 8	16 ^s 0	1 ^s 5
2	19 38 2 22	2 ^s 16	1 ^s 24	21 58 29 ^s 3	4 ^s 9	16 ^s 0	1 ^s 5
3	19 38 54 10	2 ^s 17	1 ^s 24	21 56 30 ^s 9	5 ^s 0	15 ^s 9	1 ^s 5
4	19 39 46 29	2 ^s 18	1 ^s 23	21 54 30 ^s 9	5 ^s 0	15 ^s 9	1 ^s 5
5	19 40 38 77	2 ^s 19	1 ^s 23	21 52 29 ^s 0	5 ^s 1	15 ^s 9	1 ^s 5
6	19 41 31 53	2 ^s 20	1 ^s 23	21 50 25 ^s 5	5 ^s 2	15 ^s 9	1 ^s 5
7	19 42 24 57	2 ^s 22	1 ^s 23	21 48 20 ^s 2	5 ^s 3	15 ^s 9	1 ^s 5
8	19 43 17 88	2 ^s 23	1 ^s 23	21 46 13 ^s 2	5 ^s 3	15 ^s 9	1 ^s 5
9	19 44 11 45	2 ^s 24	1 ^s 23	21 44 4 ^s 4	5 ^s 4	15 ^s 9	1 ^s 5
10	19 45 5 28	2 ^s 25	1 ^s 23	21 41 54 ^s 0	5 ^s 5	15 ^s 8	1 ^s 5
11	19 45 59 53	2 ^s 26	1 ^s 22	21 39 41 ^s 8	5 ^s 5	15 ^s 8	1 ^s 5
12	19 46 53 67	2 ^s 27	1 ^s 22	21 37 27 ^s 9	5 ^s 6	15 ^s 8	1 ^s 5
13	19 47 48 21	2 ^s 28	1 ^s 22	21 35 12 ^s 3	5 ^s 7	15 ^s 8	1 ^s 5
14	19 48 42 98	2 ^s 29	1 ^s 22	21 32 55 ^s 0	5 ^s 8	15 ^s 8	1 ^s 5
15	19 49 37 96	2 ^s 30	1 ^s 21	21 30 36 ^s 0	5 ^s 8	15 ^s 8	1 ^s 5
16	19 50 33 16	2 ^s 30	1 ^s 21	21 28 15 ^s 3	5 ^s 9	15 ^s 7	1 ^s 4
17	19 51 28 57	2 ^s 31	1 ^s 21	21 25 52 ^s 9	6 ^s 0	15 ^s 7	1 ^s 4
18	19 52 24 18	2 ^s 32	1 ^s 21	21 23 28 ^s 8	6 ^s 0	15 ^s 7	1 ^s 4
19	19 53 19 98	2 ^s 33	1 ^s 21	21 21 3 ^s 0	6 ^s 1	15 ^s 7	1 ^s 4
20	19 54 15 98	2 ^s 34	1 ^s 20	21 18 35 ^s 5	6 ^s 2	15 ^s 6	1 ^s 4
21	19 55 12 15	2 ^s 34	1 ^s 20	21 16 6 ^s 4	6 ^s 2	15 ^s 6	1 ^s 4
22	19 56 8 51	2 ^s 35	1 ^s 20	21 13 35 ^s 6	6 ^s 3	15 ^s 6	1 ^s 4
23	19 57 5 04	2 ^s 36	1 ^s 20	21 11 3 ^s 1	6 ^s 4	15 ^s 5	1 ^s 4
24	19 58 1 73	2 ^s 37	1 ^s 20	21 8 28 ^s 9	6 ^s 5	15 ^s 5	1 ^s 4
25	19 58 58 58	2 ^s 37	1 ^s 20	21 5 53 ^s 1	6 ^s 5	15 ^s 5	1 ^s 4
26	19 59 55 59	2 ^s 38	1 ^s 20	21 3 13 ^s 6	6 ^s 6	15 ^s 5	1 ^s 4
27	20 0 52 75	2 ^s 38	1 ^s 19	21 0 36 ^s 5	6 ^s 7	15 ^s 5	1 ^s 4
28	20 1 50 04	2 ^s 39	1 ^s 19	20 57 55 ^s 8	6 ^s 7	15 ^s 4	
29	20 2 47 47	2 ^s 40	1 ^s 19	20 55 13 ^s 4	6 ^s 8	15 ^s 4	
30	20 3 45 02	2 ^s 40	1 ^s 19	20 52 29 ^s 5	6 ^s 9	15 ^s 4	
31	20 4 42 69	2 ^s 41	1 ^s 19	20 49 43 ^s 9	6 ^s 9	15 ^s 4	
32	20 5 40 48	+ 2 ^s 41	1 ^s 19	S. 20 46 56 ^s 8	+ 7 ^s 0	15 ^s 4	

DECEMBER, 1871

MEAN TIME

Day of the Month.	Geocentric.					Heliocentric.												
	Apparent Right Ascension.		Apparent Declination.		Log. of True Dist. from the Earth.	Longitude.		Latitude.		Log. of Rad. Vect.								
	Noon.		Noon.		Noon.	Noon.		Noon.		Noon.								
	h	m	s	°	'	"	°	'	"	°	'	"						
1	19	37	4.32	S. 22	0	40.20	23	57	4.9	N. 0	42	47.8	1.003247					
2	19	37	55.96	21	58	43.6	23	27	38.53	1	42	43.3	.003246					
3	19	38	47.92	21	56	4.7	23	33.2	27	5	40.41	3	0	42	38.8	.003245		
4	19	39	40.18	21			0433311	23	29.8	27	5	42.29	5	0	42	34.3	.003244	
5	19	40	32.74	21		15.5	.0432402	23	26.3	27	5	44.17	7	0	42	29.8	.003243	
6	19	41	25.58	21		58.2	.0431391	23	22.9	27	5	46.59	9	0	42	25.3	.003242	
7	19	42	18.7	22	38	40.5	.0430277	23	19.4	27	5	47.54	11	0	42	20.8	.003240	
8	19	43	11.3	22	38	22.4	.0429060	23	16.0	27	5	49.42	13	0	42	16.3	.003239	
9	19	44	4.1	22	38	3.9	.0427742	23	12.5	27	5	51.30	15	0	42	11.8	.003238	
10	19	45	1.0	22	37	45.1	.0426321	23	9.1	27	5	53.18	17	0	42	7.3	.003237	
11	19	46	1.0	22	37	25.9	.0424799	23	5.7	27	5	55.6	19	0	42	2.8	.003236	
12	19	47	1.0	22	37	6.3	.0423174	23	2.3	27	5	56.55	21	0	41	58.3	.003235	
13	18	32	22.26	22	36	46.4	.0421448	22	58.8	27	5	58.43	23	0	41	53.7	.003234	
14	18	32	52.14	22	36	26.2	.0419621	22	55.4	27	6	0.31	25	0	41	49.2	.003232	
15	18	33	21.92	22	36	5.6	.0417694	22	51.9	27	6	2.19	27	0	41	44.7	.003231	
16	18	33	51.61	22	35	44.7	.0415666	22	48.5	27	6	4.77	29	0	41	40.2	.003230	
17	18	34	21.19	22	35	23.5	.0413539	22	45.1	27	6	5.55	31	0	41	35.7	.003229	
18	18	34	50.66	22	35	2.0	.0411313	22	41.7	27	6	7.44	33	0	41	31.2	.003228	
19	18	35	20.01	22	34	40.2	.0408988	22	38.2	27	6	9.32	35	0	41	26.7	.003226	
20	18	35	49.24	22	34	18.1	.0406565	22	34.8	27	6	11.20	37	0	41	22.2	.003225	
21	18	36	18.35	22	33	55.7	.0404045	22	31.3	27	6	13.86	39	0	41	17.7	.003224	
22	18	36	47.33	22	33	33.1	.0401428	22	27.9	27	6	14.56	41	0	41	13.2	.003223	
23	18	37	16.17	22	33	10.2	.0398714	22	24.4	27	6	16.45	43	0	41	8.7	.003221	
24	18	37	44.88	22	32	47.1	.0395904	22	21.0	27	6	18.33	45	0	41	4.1	.003220	
25	18	38	13.44	22	32	23.8	.0392998	22	17.5	27	6	20.21	47	0	40	59.6	.003219	
26	18	38	41.85	22	32	0.2	.0389997	22	14.1	27	6	22.95	49	0	40	55.1	.003218	
27	18	39	10.12	22	31	36.4	.0386902	22	10.6	27	6	23.57	51	0	40	50.6	.003216	
28	18	39	38.22	22	31	12.4	.0383712	22	7.1	27	6	25.45	53	0	40	46.0	.003215	
29	18	40	6.17	22	30	48.2	.0380428	22	3.6	27	6	27.34	55	0	40	41.5	.003214	
30	18	40	33.95	22	30	23.7	.0377051	22	0.1	27	6	29.22	57	0	40	37.0	.003213	
31	18	41	1.56	22	29	59.1	.0373581	21	56.6	27	6	31.10	59	0	40	32.5	.003211	
32	18	41	29.00	S. 22	29	34.2	1.0370019	21	53.1	27	6	32.58	61	0	N. 0	40	28.0	1.0032104

JANUARY, 1842.

At Transit over the Meridian of Greenwich.

JUPITER


		Variation of Right Asc. Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi- diameter.	Hor. Par.
		1' 27	0' 53	S. 22° 40' 5" 3	+ 0' 7	6' 8	0' 8
		1' 27	0' 53	22 39 49' 2	0' 7	6' 8	0' 8
	19 42	1' 27	0' 53	22 39 32' 8	0' 7	6' 8	0' 8
4	18 28 19' 83	1' 27	0' 53	22 39 15' 9	0' 7	6' 8	0' 8
5	18 28 50' 21	1' 26	0' 53	22 38 58' 6	0' 7	6' 8	0' 8
6	18 29 20' 53	1' 26	0' 53	22 38 40' 9	0' 7	6' 8	0' 8
7	18 29 50' 79	1' 26	0' 53	22 38 22' 9	0' 8	6' 8	0' 8
8	18 30 20' 99	1' 26	0' 53	22 38 4' 4	0' 8	6' 8	0' 8
9	18 30 51' 13	1' 25	0' 53	22 37 45' 7	0' 8	6' 9	0' 8
10	18 31 21' 19	1' 25	0' 53	22 37 26' 5	0' 8	6' 9	0' 8
11	18 31 51' 17	1' 25	0' 53	22 37 7' 0	0' 8	6' 9	0' 8
12	18 32 21' 07	1' 24	0' 53	22 36 47' 2	0' 8	6' 9	0' 8
13	18 32 50' 88	1' 24	0' 53	22 36 27' 0	0' 9	6' 9	0' 8
14	18 33 20' 60	1' 24	0' 53	22 36 6' 5	0' 9	6' 9	0' 8
15	18 33 50' 21	1' 23	0' 53	22 35 45' 7	0' 9	6' 9	0' 8
16	18 34 19' 72	1' 23	0' 53	22 35 24' 5	0' 9	6' 9	0' 8
17	18 34 49' 13	1' 22	0' 53	22 35 3' 1	0' 9	6' 9	0' 8
18	18 35 18' 42	1' 22	0' 53	22 34 41' 4	0' 9	6' 9	0' 8
19	18 35 47' 59	1' 21	0' 53	22 34 19' 3	0' 9	6' 9	0' 8
20	18 36 16' 63	1' 21	0' 53	22 33 57' 0	0' 9	6' 9	0' 8
21	18 36 45' 54	1' 20	0' 53	22 33 34' 5	0' 9	6' 9	0' 8
22	18 37 14' 33	1' 20	0' 53	22 33 11' 7	1' 0		0' 8
23	18 37 42' 97	1' 19	0' 53	22 32 48' 6	1' 0		0' 8
24	18 38 11' 47	1' 18	0' 53	22 32 25' 3	1' 0		0' 8
25	18 38 39' 83	1' 18	0' 53	22 32 1' 8	1' 0		
26	18 39 8' 03	1' 17	0' 53	22 31 38' 1	1' 0		
27	18 39 36' 08	1' 17	0' 53	22 31 14' 2	1' 0		
28	18 40 3' 97	1' 16	0' 53	22 30 50' 0	1' 1		
29	18 40 31' 70	1' 15	0' 53	22 30 25' 7	1' 1		
30	18 40 59' 26	1' 14	0' 53	22 30 1' 1	1' 1		
31	18 41 26' 65	1' 14	0' 53	22 29 36' 3	1' 1		
32	18 41 53' 85	+ 1' 13	0' 54	S. 22° 29' 11' 4	+ 1		

JANUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
1	18 26 18.31	S. 22 40 20.8	1.0435424	23 40.1	275 37 4.9	N. 0 42 47.8	1.0032475
2	18 26 48.90	22 40 5.1	.0434822	23 36.7	275 38 53.1	0 42 43.3	.0032464
3	18 27 19.47	22 39 49.0	.0434118	23 33.2	275 40 41.3	0 42 38.8	.0032453
4	18 27 49.99	22 39 32.4	.0433311	23 29.8	275 42 29.5	0 42 34.3	.0032442
5	18 28 20.48	22 39 15.5	.0432402	23 26.3	275 44 17.7	0 42 29.8	.0032431
6	18 28 50.92	22 38 58.2	.0431391	23 22.9	275 46 5.9	0 42 25.3	.0032420
7	18 29 21.31	22 38 40.5	.0430277	23 19.4	275 47 54.1	0 42 20.8	.0032409
8	18 29 51.64	22 38 22.4	.0429060	23 16.0	275 49 42.3	0 42 16.3	.0032397
9	18 30 21.91	22 38 3.9	.0427742	23 12.5	275 51 30.4	0 42 11.8	.0032386
10	18 30 52.11	22 37 45.1	.0426321	23 9.1	275 53 18.6	0 42 7.3	.0032374
11	18 31 22.24	22 37 25.9	.0424799	23 5.7	275 55 6.8	0 42 2.8	.0032363
12	18 31 52.29	22 37 6.3	.0423174	23 2.3	275 56 55.0	0 41 58.3	.0032351
13	18 32 22.26	22 36 46.4	.0421448	22 58.8	275 58 43.2	0 41 53.7	.0032340
14	18 32 52.14	22 36 26.2	.0419621	22 55.4	276 0 31.4	0 41 49.2	.0032328
15	18 33 21.92	22 36 5.6	.0417694	22 51.9	276 2 19.5	0 41 44.7	.0032316
16	18 33 51.61	22 35 44.7	.0415666	22 48.5	276 4 7.7	0 41 40.2	.0032304
17	18 34 21.19	22 35 23.5	.0413539	22 45.1	276 5 55.9	0 41 35.7	.0032292
18	18 34 50.66	22 35 2.0	.0411313	22 41.7	276 7 44.1	0 41 31.2	.0032280
19	18 35 20.01	22 34 40.2	.0408988	22 38.2	276 9 32.2	0 41 26.7	.0032268
20	18 35 49.24	22 34 18.1	.0406565	22 34.8	276 11 20.4	0 41 22.2	.0032256
21	18 36 18.35	22 33 55.7	.0404045	22 31.3	276 13 8.6	0 41 17.7	.0032243
22	18 36 47.33	22 33 33.1	.0401428	22 27.9	276 14 56.8	0 41 13.2	.0032231
23	18 37 16.17	22 33 10.2	.0398714	22 24.4	276 16 45.0	0 41 8.7	.0032219
24	18 37 44.88	22 32 47.1	.0395904	22 21.0	276 18 33.1	0 41 4.1	.0032206
25	18 38 13.44	22 32 23.8	.0392998	22 17.5	276 20 21.3	0 40 59.6	.0032194
26	18 38 41.85	22 32 0.2	.0389997	22 14.1	276 22 9.5	0 40 55.1	.0032181
27	18 39 10.12	22 31 36.4	.0386902	22 10.6	276 23 57.6	0 40 50.6	.0032168
28	18 39 38.22	22 31 12.4	.0383712	22 7.1	276 25 45.8	0 40 46.0	.0032156
29	18 40 6.17	22 30 48.2	.0380428	22 3.6	276 27 34.0	0 40 41.5	.0032143
30	18 40 33.95	22 30 23.7	.0377051	22 0.1	276 29 22.2	0 40 37.0	.0032130
31	18 41 1.56	22 29 59.1	.0373581	21 56.6	276 31 10.3	0 40 32.5	.0032117
32	18 41 29.60	S. 22 29 34.2	1.0370019	21 53.1	276 32 58.5	N. 0 40 28.0	1.0032104

JANUARY, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	18 26 48.49	+ 1.27	0.53	S. 22 40 5.3	+ 0.7	6.8	0.8
2	18 27 18.97	1.27	0.53	22 39 49.2	0.7	6.8	0.8
3	18 27 49.42	1.27	0.53	22 39 32.8	0.7	6.8	0.8
4	18 28 19.83	1.27	0.53	22 39 15.9	0.7	6.8	0.8
5	18 28 50.21	1.26	0.53	22 38 58.6	0.7	6.8	0.8
6	18 29 20.53	1.26	0.53	22 38 40.9	0.7	6.8	0.8
7	18 29 50.79	1.26	0.53	22 38 22.9	0.8	6.8	0.8
8	18 30 20.99	1.26	0.53	22 38 4.4	0.8	6.8	0.8
9	18 30 51.13	1.25	0.53	22 37 45.7	0.8	6.9	0.8
10	18 31 21.19	1.25	0.53	22 37 26.5	0.8	6.9	0.8
11	18 31 51.17	1.25	0.53	22 37 7.0	0.8	6.9	0.8
12	18 32 21.07	1.24	0.53	22 36 47.2	0.8	6.9	0.8
13	18 32 50.88	1.24	0.53	22 36 27.0	0.9	6.9	0.8
14	18 33 20.60	1.24	0.53	22 36 6.5	0.9	6.9	0.8
15	18 33 50.21	1.23	0.53	22 35 45.7	0.9	6.9	0.8
16	18 34 19.72	1.23	0.53	22 35 24.5	0.9	6.9	0.8
17	18 34 49.13	1.22	0.53	22 35 3.1	0.9	6.9	0.8
18	18 35 18.42	1.22	0.53	22 34 41.4	0.9	6.9	0.8
19	18 35 47.59	1.21	0.53	22 34 19.3	0.9	6.9	0.8
20	18 36 16.63	1.21	0.53	22 33 57.0	0.9	6.9	0.8
21	18 36 45.54	1.20	0.53	22 33 34.5	0.9	6.9	0.8
22	18 37 14.33	1.20	0.53	22 33 11.7	1.0	6.9	0.8
23	18 37 42.97	1.19	0.53	22 32 48.6	1.0	6.9	0.8
24	18 38 11.47	1.18	0.53	22 32 25.3	1.0	6.9	0.8
25	18 38 39.83	1.18	0.53	22 32 1.8	1.0	6.9	
26	18 39 8.03	1.17	0.53	22 31 38.1	1.0	6.9	
27	18 39 36.08	1.17	0.53	22 31 14.2	1.0	6.9	
28	18 40 3.97	1.16	0.53	22 30 50.0	1.0	6.9	
29	18 40 31.70	1.15	0.53	22 30 25.7	1.0	6.9	
30	18 40 59.26	1.14	0.53	22 30 1.1	1.0	6.9	
31	18 41 26.65	1.14	0.53	22 29 36.3	1.0	6.9	
32	18 41 53.85	+ 1.13	0.54	S. 22 29 11.4	+ 1.0	7.0	

FEBRUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	o / ' "		h m	o / ' "	o / ' "	
1	18 41 29.00	S. 22 29 34.2	1.0370019	21 53.1	276 32 58.5	N. 0 40 28.0	1.0032104
2	18 41 56.25	22 29 9.2	.0366366	21 49.6	276 34 46.7	0 40 23.4	.0032091
3	18 42 23.33	22 28 44.0	.0362621	21 46.2	276 36 34.8	0 40 18.9	.0032078
4	18 42 50.21	22 28 18.7	.0358785	21 42.7	276 38 23.0	0 40 14.4	.0032064
5	18 43 16.90	22 27 53.3	.0354859	21 39.2	276 40 11.2	0 40 9.9	.0032051
6	18 43 43.39	22 27 27.8	.0350844	21 35.7	276 41 59.3	0 40 5.4	.0032037
7	18 44 9.67	22 27 2.2	.0346739	21 32.2	276 43 47.5	0 40 0.8	.0032024
8	18 44 35.74	22 26 36.5	.0342547	21 28.7	276 45 35.6	0 39 56.3	.0032010
9	18 45 1.60	22 26 10.7	.0338268	21 25.2	276 47 23.8	0 39 51.8	.0031996
10	18 45 27.24	22 25 44.9	.0333902	21 21.7	276 49 11.9	0 39 47.2	.0031983
11	18 45 52.65	22 25 19.0	.0329450	21 18.2	276 51 0.1	0 39 42.7	.0031969
12	18 46 17.84	22 24 53.1	.0324914	21 14.7	276 52 48.3	0 39 38.2	.0031955
13	18 46 42.79	22 24 27.1	.0320294	21 11.2	276 54 36.4	0 39 33.7	.0031941
14	18 47 7.50	22 24 1.1	.0315592	21 7.7	276 56 24.6	0 39 29.1	.0031927
15	18 47 31.96	22 23 35.2	.0310808	21 4.2	276 58 12.7	0 39 24.6	.0031913
16	18 47 56.18	22 23 9.2	.0305943	21 0.6	277 0 0.9	0 39 20.1	.0031899
17	18 48 20.14	22 22 43.3	.0300999	20 57.1	277 1 49.0	0 39 15.5	.0031885
18	18 48 43.85	22 22 17.4	.0295977	20 53.5	277 3 37.2	0 39 11.0	.0031870
19	18 49 7.29	22 21 51.6	.0290877	20 50.0	277 5 25.3	0 39 6.5	.0031856
20	18 49 30.47	22 21 25.9	.0285702	20 46.4	277 7 13.5	0 39 1.9	.0031842
21	18 49 53.38	22 21 0.2	.0280451	20 42.8	277 9 1.6	0 38 57.4	.0031827
22	18 50 16.02	22 20 34.6	.0275125	20 39.2	277 10 49.8	0 38 52.9	.0031813
23	18 50 38.39	22 20 9.1	.0269727	20 35.7	277 12 37.9	0 38 48.3	.0031798
24	18 51 0.47	22 19 43.7	.0264256	20 32.1	277 14 26.1	0 38 43.8	.0031783
25	18 51 22.27	22 19 18.4	.0258714	20 28.6	277 16 14.3	0 38 39.3	.0031768
26	18 51 43.78	22 18 53.3	.0253102	20 25.0	277 18 2.4	0 38 34.7	.0031753
27	18 52 5.01	22 18 28.3	.0247421	20 21.4	277 19 50.6	0 38 30.2	.0031738
28	18 52 25.93	22 18 3.5	.0241672	20 17.8	277 21 38.7	0 38 25.6	.0031723
29	18 52 46.56	S. 22 17 38.9	1.0235855	20 14.2	277 23 26.9	N. 0 38 21.1	1.0031708

FEBRUARY, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	h m s 18 41 53·85	+ 1·13	0·54	S. 22 29 11·4	+ 1·0	7·0	0·8
2	18 42 20·88	1·12	0·54	22 28 46·3	1·0	7·0	0·8
3	18 42 47·72	1·11	0·54	22 28 21·1	1·1	7·0	0·8
4	18 43 14·36	1·11	0·54	22 27 55·7	1·1	7·0	0·8
5	18 43 40·80	1·10	0·54	22 27 30·2	1·1	7·0	0·8
6	18 44 7·04	1·09	0·54	22 27 4·7	1·1	7·0	0·8
7	18 44 33·07	1·08	0·54	22 26 39·0	1·1	7·0	0·8
8	18 44 58·89	1·07	0·54	22 26 13·3	1·1	7·0	0·8
9	18 45 24·49	1·06	0·54	22 25 47·6	1·1	7·0	0·8
10	18 45 49·86	1·05	0·54	22 25 21·8	1·1	7·0	0·8
11	18 46 15·01	1·04	0·54	22 24 55·9	1·1	7·0	0·8
12	18 46 39·92	1·03	0·54	22 24 30·0	1·1	7·0	0·8
13	18 47 4·60	1·02	0·54	22 24 4·1	1·1	7·0	0·8
14	18 47 29·04	1·01	0·54	22 23 38·2	1·1	7·0	0·8
15	18 47 53·23	1·00	0·54	22 23 12·4	1·1	7·0	0·8
16	18 48 17·16	0·99	0·54	22 22 46·3	1·1	7·0	0·8
17	18 48 40·84	0·98	0·54	22 22 20·7	1·1	7·0	0·8
18	18 49 4·26	0·97	0·54	22 21 55·0	1·1	7·0	0·8
19	18 49 27·42	0·96	0·54	22 21 29·3	1·1	7·0	0·8
20	18 49 50·31	0·95	0·54	22 21 3·6	1·1	7·0	0·8
21	18 50 12·93	0·94	0·54	22 20 38·1	1·1	7·0	0·8
22	18 50 35·28	0·93	0·55	22 20 12·7	1·1	7	
23	18 50 57·35	0·91	0·55	22 19 47·4	1·1		
24	18 51 19·14	0·90	0·55	22 19 22·1	1·1		
25	18 51 40·66	0·89	0·55	22 18 57·0	1·0		
26	18 52 1·86	0·88	0·55	22 18 32·1	1·0		
27	18 52 22·78	0·87	0·55	22 18 7·3	1·0		
28	18 52 43·40	0·85	0·55	22 17 42·7	1·0		
29	18 53 3·72	+ 0·84	0·55	S. 22 17 18·3	+ 1·0		

MARCH, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	h m s 18 52 46.56	S. ° ' " 22 17 38.9	1.0235855	h m 20 14.2	° ' " 277 23 26.9	N. ° ' " 0 38 21.1	1.0031708
2	18 53 6.88	22 17 14.5	.0229973	20 10.6	277 25 15.0	0 38 16.6	.0031693
3	18 53 26.89	22 16 50.2	.0224025	20 7.0	277 27 3.2	0 38 12.0	.0031677
4	18 53 46.59	22 16 26.2	.0218014	20 3.4	277 28 51.3	0 38 7.5	.0031662
5	18 54 5.97	22 16 2.5	.0211940	19 59.8	277 30 39.5	0 38 2.9	.0031646
6	18 54 25.04	22 15 38.9	.0205805	19 56.2	277 32 27.6	0 37 58.4	.0031631
7	18 54 43.78	22 15 15.6	.0199610	19 52.6	277 34 15.7	0 37 53.9	.0031615
8	18 55 2.19	22 14 52.6	.0193356	19 48.9	277 36 3.9	0 37 49.3	.0031600
9	18 55 20.27	22 14 29.9	.0187045	19 45.3	277 37 52.0	0 37 44.8	.0031584
10	18 55 38.00	22 14 7.4	.0180679	19 41.6	277 39 40.2	0 37 40.2	.0031568
11	18 55 55.40	22 13 45.3	.0174258	19 38.0	277 41 28.3	0 37 35.7	.0031552
12	18 56 12.45	22 13 23.5	.0167784	19 34.3	277 43 16.5	0 37 31.1	.0031537
13	18 56 29.15	22 13 2.1	.0161259	19 30.7	277 45 4.6	0 37 26.6	.0031521
14	18 56 45.50	22 12 41.0	.0154684	19 27.0	277 46 52.8	0 37 22.0	.0031504
15	18 57 1.49	22 12 20.2	.0148062	19 23.4	277 48 40.9	0 37 17.5	.0031488
16	18 57 17.12	22 11 59.9	.0141393	19 19.7	277 50 29.1	0 37 12.9	.0031472
17	18 57 32.39	22 11 39.9	.0134680	19 16.0	277 52 17.2	0 37 8.4	.0031455
18	18 57 47.30	22 11 20.4	.0127923	19 12.3	277 54 5.4	0 37 3.8	.0031439
19	18 58 1.84	22 11 1.3	.0121125	19 8.6	277 55 53.6	0 36 59.3	.0031423
20	18 58 16.01	22 10 42.5	.0114288	19 4.9	277 57 41.7	0 36 54.7	.0031406
21	18 58 29.81	22 10 24.2	.0107413	19 1.2	277 59 29.9	0 36 50.2	.0031389
22	18 58 43.23	22 10 6.4	.0100501	18 57.5	278 1 18.0	0 36 45.6	.0031373
23	18 58 56.28	22 9 49.0	.0093555	18 53.8	278 3 6.2	0 36 41.1	.0031356
24	18 59 8.95	22 9 32.1	.0086575	18 50.0	278 4 54.3	0 36 36.5	.0031339
25	18 59 21.24	22 9 15.6	.0079564	18 46.3	278 6 42.5	0 36 32.0	.0031322
26	18 59 33.14	22 8 59.7	.0072523	18 42.5	278 8 30.7	0 36 27.4	.0031305
27	18 59 44.65	22 8 44.2	.0065454	18 38.8	278 10 18.8	0 36 22.8	.0031288
28	18 59 55.78	22 8 29.2	.0058358	18 35.0	278 12 7.0	0 36 18.3	.0031271
29	19 0 6.51	22 8 14.7	.0051238	18 31.3	278 13 55.1	0 36 13.7	.0031254
30	19 0 16.85	22 8 0.8	.0044094	18 27.5	278 15 43.3	0 36 9.2	.0031236
31	19 0 26.79	22 7 47.4	.0036929	18 23.7	278 17 31.5	0 36 4.6	.0031219
32	19 0 36.33	S. 22 7 34.5	1.0029744	18 19.9	278 19 19.6	N. 0 36 0.0	1.0031202

MARCH, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 18 ^m 53 ^s 3.72	+ 0.84	0.55	S. 22 17 18.3	+ 1.0	7.1	0.8
2	18 53 23.73	0.83	0.55	22 16 54.1	1.0	7.1	0.8
3	18 53 43.44	0.81	0.55	22 16 30.1	1.0	7.1	0.8
4	18 54 2.82	0.80	0.55	22 16 6.3	1.0	7.1	0.8
5	18 54 21.88	0.79	0.55	22 15 42.8	1.0	7.1	0.8
6	18 54 40.63	0.77	0.55	22 15 19.5	1.0	7.1	0.8
7	18 54 59.05	0.76	0.55	22 14 56.5	1.0	7.1	0.8
8	18 55 17.14	0.75	0.55	22 14 33.8	0.9	7.1	0.8
9	18 55 34.90	0.73	0.56	22 14 11.4	0.9	7.2	0.8
10	18 55 52.31	0.72	0.56	22 13 49.2	0.9	7.2	0.8
11	18 56 9.38	0.70	0.56	22 13 27.5	0.9	7.2	0.8
12	18 56 26.10	0.69	0.56	22 13 6.0	0.9	7.2	0.8
13	18 56 42.47	0.67	0.56	22 12 44.9	0.9	7.2	0.8
14	18 56 58.49	0.66	0.56	22 12 24.2	0.9	7.2	0.8
15	18 57 14.15	0.65	0.56	22 12 3.8	0.8	7.2	0.8
16	18 57 29.45	0.63	0.57	22 11 43.8	0.8	7.3	0.8
17	18 57 44.38	0.61	0.57	22 11 24.3	0.8	7.3	0.8
18	18 57 58.96	0.60	0.57	22 11 5.1	0.8	7.3	0.8
19	18 58 13.17	0.58	0.57	22 10 46.3	0.8	7.3	0.8
20	18 58 27.01	0.57	0.57	22 10 28.0	0.8	7.3	0.8
21	18 58 40.47	0.55	0.57	22 10 10.1	0.7	7.3	0.8
22	18 58 53.56	0.54	0.57	22 9 52.6	0.7		
23	18 59 6.28	0.52	0.57	22 9 35.6	0.7		
24	18 59 18.62	0.51	0.57	22 9 19.1	0.7		
25	18 59 30.57	0.49	0.58	22 9 3.1	0.7		
26	18 59 42.14	0.47	0.58	22 8 47.6	0.6		
27	18 59 53.33	0.46	0.58	22 8 32.5	0.6		
28	19 0 4.13	0.44	0.58	22 8 18.0	0.6		
29	19 0 14.53	0.43	0.58	22 8 4.0	0.6		
30	19 0 24.54	0.41	0.58	22 7 50.5	0.6		
31	19 0 34.15	0.39	0.58	22 7 37.5	0.5		
32	19 0 43.36	+ 0.38	0.58	S. 22 7 25.1	+ 0.5		

APRIL, 1842.

MEAN TIME.

Geocentric.				Heliocentric.		
Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Midian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
h m s	° ' "		h m	° ' "	° ' "	
19 0 36.33	S. 29 7 34.5	1.0029744	18 19.9	278 19 19.6	N. 0 36 0.0	1.0031202
19 0 45.47	29 7 29.2	.0022541	18 16.1	278 21 7.8	0 35 55.5	.0031184
19 0 54.21	29 7 10.4	.0015322	18 12.3	278 22 56.0	0 35 50.9	.0031167
19 1 2.54	29 6 59.2	.0009089	18 8.6	278 24 44.1	0 35 46.4	.0031145
19 1 10.46	29 6 48.6	1.0000843	18 4.8	278 26 39.3	0 35 41.8	.0031131
19 1 17.97	29 6 38.6	0.9993587	18 1.0	278 28 20.5	0 35 37.2	.0031113
19 1 25.07	29 6 29.1	.9986323	17 57.1	278 30 8.7	0 35 32.7	.0031095
19 1 31.75	29 6 20.2	.9979058	17 53.3	278 31 56.8	0 35 28.1	.0031077
19 1 38.02	29 6 12.0	.9971778	17 49.4	278 33 45.0	0 35 23.5	.0031059
19 1 43.87	29 6 4.3	.9964508	17 45.6	278 35 33.9	0 35 19.0	.0031041
19 1 49.30	29 5 57.3	.9957227	17 41.8	278 37 21.4	0 35 14.4	.0031023
19 1 54.31	29 5 50.9	.9949955	17 38.0	278 39 9.6	0 35 9.8	.0031004
19 1 58.90	29 5 43.2	.9942687	17 34.1	278 40 57.7	0 35 5.3	.0030986
19 2 3.07	29 5 40.0	.9935427	17 30.3	278 42 45.9	0 35 0.7	.0030968
19 2 6.82	29 5 35.5	.9928176	17 26.4	278 44 34.1	0 34 56.1	.0030949
19 2 10.14	29 5 31.7	.9920937	17 22.5	278 46 22.3	0 34 51.6	.0030931
19 2 13.05	29 5 28.5	.9913712	17 18.6	278 48 10.5	0 34 47.0	.0030913
19 2 15.54	29 5 25.9	.9906509	17 14.7	278 49 58.7	0 34 42.4	.0030895
19 2 17.60	29 5 24.0	.9899313	17 10.8	278 51 46.9	0 34 37.8	.0030877
19 2 19.25	29 5 22.7	.9892143	17 6.9	278 53 35.1	0 34 33.3	.0030859
19 2 20.47	29 5 22.1	.9884995	17 3.0	278 55 23.3	0 34 28.7	.0030841
19 2 21.28	29 5 22.1	.9877871	16 59.1	278 57 11.5	0 34 24.1	.0030823
19 2 21.66	29 5 22.8	.9870774	16 55.1	278 58 59.7	0 34 19.5	.0030799
19 2 21.63	29 5 24.1	.9863705	16 51.2	279 0 47.9	0 34 15.0	.0030779
19 2 21.18	29 5 26.0	.9856666	16 47.2	279 2 36.1	0 34 10.4	.0030760
19 2 20.32	29 5 28.6	.9849661	16 43.3	279 4 24.3	0 34 5.8	.0030741
19 2 19.04	29 5 31.9	.9842691	16 39.3	279 6 12.5	0 34 1.2	.0030721
19 2 17.34	29 5 35.8	.9835758	16 35.4	279 8 0.8	0 33 56.7	.0030702
19 2 15.23	29 5 40.3	.9828865	16 31.4	279 9 49.0	0 33 52.1	.0030682
19 2 12.71	29 5 45.5	.9822012	16 27.4	279 11 37.2	0 33 47.5	.0030662
19 2 9.77	S. 22 5 51.3	0.9815203	16 23.4	279 13 25.4	N. 0 33 42.9	1.0030643

APRIL, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.			Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.			Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
	^h	^m	^s	^s	^s	^o	[']	["]	["]	["]	["]
1	19	0	43.36	+ 0.38	0.58	S. 22	7	25.1	+ 0.5	7.5	0.9
2	19	0	52.16	0.36	0.58	22	7	13.3	0.5	7.5	0.9
3	19	1	0.57	0.34	0.58	22	7	2.0	0.5	7.5	0.9
4	19	1	8.57	0.32	0.58	22	6	51.3	0.4	7.5	0.9
5	19	1	16.16	0.31	0.58	22	6	41.1	0.4	7.5	0.9
6	19	1	23.34	0.29	0.58	22	6	31.5	0.4	7.5	0.9
7	19	1	30.11	0.28	0.58	22	6	22.5	0.4	7.5	0.9
8	19	1	36.46	0.26	0.58	22	6	14.1	0.3	7.6	0.9
9	19	1	42.40	0.24	0.59	22	6	6.4	0.3	7.6	0.9
10	19	1	47.98	0.22	0.59	22	5	59.2	0.3	7.6	0.9
11	19	1	53.03	0.20	0.59	22	5	52.6	0.3	7.6	0.9
12	19	1	57.72	0.19	0.59	22	5	46.7	0.2	7.6	0.9
13	19	2	1.99	0.17	0.59	22	5	41.4	0.2	7.6	0.9
14	19	2	5.84	0.15	0.59	22	5	36.7	0.2	7.6	0.9
15	19	2	9.28	0.13	0.59	22	5	32.7	0.2	7.7	0.9
16	19	2	12.29	0.12	0.59	22	5	29.4	0.1	7.7	0.9
17	19	2	14.89	0.10	0.59	22	5	26.6	0.1	7.7	0.9
18	19	2	17.07	0.08	0.59	22	5	24.5	+ 0.1	7.7	0.9
19	19	2	18.82	0.06	0.59	22	5	23.1	0.0	7.7	0.9
20	19	2	20.17	0.05	0.59	22	5	22.2	0.0	7.7	0.9
21	19	2	21.09	0.03	0.59	22	5	22.1	0.0	7.7	0.9
22	19	2	21.59	+ 0.01	0.60	22	5	22.6	0.0	---	0.9
23	19	2	21.68	0.00	0.60	22	5	23.7	- 0.1	---	9
24	19	2	21.36	- 0.02	0.60	22	5	25.5	0.1	---	9
25	19	2	20.62	0.04	0.60	22	5	27.9	0.1	---	9
26	19	2	19.46	0.06	0.60	22	5	30.9	0.1	---	9
27	19	2	17.90	0.07	0.60	22	5	34.6	0.2	---	9
28	19	2	15.92	0.09	0.60	22	5	38.9	0.2	---	9
29	19	2	13.53	0.11	0.60	22	5	43.9	0.2	---	9
30	19	2	10.72	0.13	0.61	22	5	49.5	0.2	---	9
31	19	2	7.52	- 0.14	0.61	S. 22	5	55.8	- 0.1	---	9

MAY, 1842.

MEAN TIME.

Geocentric.				Heliocentric.		
Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
<small>h m s</small>	<small>° ′ ″</small>		<small>h m</small>	<small>° ′ ″</small>	<small>° ′ ″</small>	
19 2 9 ^h 77 ^m	S. 22 5 51 ^o 3 ⁱ	0 ^o 9815203	16 23 ^h 4 ^m	279 13 25 ^o 4 ⁱ	N. 0 33 42 ^o 9 ⁱ	1 ^o 0030643
19 2 6 ^h 42 ^m	22 5 57 ^o 8 ⁱ	9808440	16 19 ^h 4 ^m	279 15 13 ^o 6 ⁱ	0 33 38 ^o 3 ⁱ	0030623
19 2 2 ^h 67 ^m	22 6 4 ^o 9 ⁱ	9801726	16 15 ^h 4 ^m	279 17 1 ^o 8 ⁱ	0 33 33 ^o 8 ⁱ	0030603
19 1 58 ^h 50 ^m	22 6 12 ^o 7 ⁱ	9795063	16 11 ^h 4 ^m	279 18 50 ^o 1 ⁱ	0 33 29 ^o 2 ⁱ	0030583
19 1 53 ^h 93 ^m	22 6 21 ^o 1 ⁱ	9788452	16 7 ^h 4 ^m	279 20 38 ^o 3 ⁱ	0 33 24 ^o 6 ⁱ	0030563
19 1 48 ^h 95 ^m	22 6 30 ^o 1 ⁱ	9781897	16 3 ^h 4 ^m	279 22 26 ^o 5 ⁱ	0 33 20 ^o 0 ⁱ	0030543
19 1 43 ^h 57 ^m	22 6 39 ^o 8 ⁱ	9775400	15 59 ^h 3 ^m	279 24 14 ^o 8 ⁱ	0 33 15 ^o 4 ⁱ	0030523
19 1 37 ^h 78 ^m	22 6 50 ^o 1 ⁱ	9768963	15 55 ^h 3 ^m	279 26 3 ^o 0 ⁱ	0 33 10 ^o 9 ⁱ	0030502
19 1 31 ^h 60 ^m	22 7 1 ^o 0 ⁱ	9762589	15 51 ^h 2 ^m	279 27 51 ^o 3 ⁱ	0 33 6 ^o 3 ⁱ	0030482
19 1 25 ^h 02 ^m	22 7 12 ^o 5 ⁱ	9756280	15 47 ^h 2 ^m	279 29 39 ^o 5 ⁱ	0 33 1 ^o 7 ⁱ	0030461
19 1 18 ^h 06 ^m	22 7 24 ^o 6 ⁱ	9750039	15 43 ^h 2 ^m	279 31 27 ^o 8 ⁱ	0 32 57 ^o 1 ⁱ	0030441
19 1 10 ^h 70 ^m	22 7 37 ^o 3 ⁱ	9743868	15 39 ^h 2 ^m	279 33 16 ^o 0 ⁱ	0 32 52 ^o 5 ⁱ	0030420
19 1 2 ^h 96 ^m	22 7 50 ^o 6 ⁱ	9737770	15 35 ^h 1 ^m	279 35 4 ^o 3 ⁱ	0 32 47 ^o 9 ⁱ	0030400
19 0 54 ^h 84 ^m	22 8 4 ^o 4 ⁱ	9731747	15 31 ^h 1 ^m	279 36 52 ^o 5 ⁱ	0 32 43 ^o 3 ⁱ	0030379
19 0 46 ^h 35 ^m	22 8 18 ^o 8 ⁱ	9725800	15 27 ^h 0 ^m	279 38 40 ^o 8 ⁱ	0 32 38 ^o 8 ⁱ	0030359
19 0 37 ^h 48 ^m	22 8 33 ^o 8 ⁱ	9719933	15 22 ^h 9 ^m	279 40 29 ^o 0 ⁱ	0 32 34 ^o 2 ⁱ	0030338
19 0 28 ^h 25 ^m	22 8 49 ^o 4 ⁱ	9714146	15 18 ^h 8 ^m	279 42 17 ^o 3 ⁱ	0 32 29 ^o 6 ⁱ	0030317
19 0 18 ^h 66 ^m	22 9 5 ^o 5 ⁱ	9708443	15 14 ^h 7 ^m	279 44 5 ^o 6 ⁱ	0 32 25 ^o 0 ⁱ	0030296
19 0 8 ^h 71 ^m	22 9 22 ^o 1 ⁱ	9702825	15 10 ^h 6 ^m	279 45 53 ^o 8 ⁱ	0 32 20 ^o 4 ⁱ	0030275
18 59 58 ^h 41 ^m	22 9 39 ^o 2 ⁱ	9697295	15 6 ^h 5 ^m	279 47 42 ^o 1 ⁱ	0 32 15 ^o 8 ⁱ	0030253
18 59 47 ^h 77 ^m	22 9 56 ^o 8 ⁱ	9691854	15 2 ^h 4 ^m	279 49 30 ^o 4 ⁱ	0 32 11 ^o 2 ⁱ	0030232
18 59 36 ^h 79 ^m	22 10 15 ^o 0 ⁱ	9686504	14 58 ^h 3 ^m	279 51 18 ^o 6 ⁱ	0 32 6 ^o 6 ⁱ	0030211
18 59 25 ^h 46 ^m	22 10 33 ^o 6 ⁱ	9681248	14 54 ^h 1 ^m	279 53 6 ^o 9 ⁱ	0 32 2 ^o 0 ⁱ	0030190
18 59 13 ^h 81 ^m	22 10 52 ^o 7 ⁱ	9676087	14 50 ^h 0 ^m	279 54 55 ^o 2 ⁱ	0 31 57 ^o 4 ⁱ	0030168
18 59 1 ^h 83 ^m	22 11 12 ^o 2 ⁱ	9671022	14 45 ^h 8 ^m	279 56 43 ^o 4 ⁱ	0 31 52 ^o 9 ⁱ	0030147
18 58 49 ^h 52 ^m	22 11 32 ^o 2 ⁱ	9666056	14 41 ^h 7 ^m	279 58 31 ^o 7 ⁱ	0 31 48 ^o 3 ⁱ	0030125
18 58 36 ^h 90 ^m	22 11 52 ^o 7 ⁱ	9661191	14 37 ^h 5 ^m	280 0 20 ^o 0 ⁱ	0 31 43 ^o 7 ⁱ	0030104
18 58 23 ^h 97 ^m	22 12 13 ^o 5 ⁱ	9656429	14 33 ^h 4 ^m	280 2 8 ^o 3 ⁱ	0 31 39 ^o 1 ⁱ	0030082
18 58 10 ^h 74 ^m	22 12 34 ^o 8 ⁱ	9651771	14 29 ^h 3 ^m	280 3 56 ^o 6 ⁱ	0 31 34 ^o 5 ⁱ	0030060
18 57 57 ^h 21 ^m	22 12 56 ^o 5 ⁱ	9647219	14 25 ^h 1 ^m	280 5 44 ^o 8 ⁱ	0 31 29 ^o 9 ⁱ	0030038
18 57 43 ^h 38 ^m	22 13 18 ^o 6 ⁱ	9642775	14 20 ^h 9 ^m	280 7 33 ^o 1 ⁱ	0 31 25 ^o 3 ⁱ	0030016
18 57 29 ^h 26 ^m	S. 22 13 41 ^o 0 ⁱ	0 ^o 9638441	14 16 ^h 7 ^m	280 9 21 ^o 4 ⁱ	N. 0 31 20 ^o 7 ⁱ	1 ^o 0029994

MAY, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.			Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.			Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
	h	m	s	"	s	°	'	"	"	"	"
1	19	2	7.52	-0.14	0.61	S. 22	5	55.8	-0.3	7.9	0.9
2	19	2	3.90	0.16	0.61	22	6	2.6	0.3	7.9	0.9
3	19	1	59.88	0.18	0.61	22	6	10.2	0.3	7.9	0.9
4	19	1	55.45	0.19	0.61	22	6	18.3	0.4	7.9	0.9
5	19	1	50.62	0.21	0.61	22	6	27.1	0.4	7.9	0.9
6	19	1	45.38	0.23	0.61	22	6	36.5	0.4	7.9	0.9
7	19	1	39.75	0.24	0.61	22	6	46.6	0.4	8.0	0.9
8	19	1	33.72	0.26	0.61	22	6	57.2	0.5	8.0	0.9
9	19	1	27.29	0.28	0.61	22	7	8.5	0.5	8.0	0.9
10	19	1	20.48	0.29	0.61	22	7	20.4	0.5	8.0	0.9
11	19	1	13.28	0.31	0.61	22	7	32.9	0.5	8.0	0.9
12	19	1	5.69	0.32	0.61	22	7	46.0	0.6	8.0	0.9
13	19	0	57.73	0.34	0.61	22	7	59.6	0.6	8.0	0.9
14	19	0	49.39	0.36	0.61	22	8	13.8	0.6	8.0	0.9
15	19	0	40.68	0.37	0.61	22	8	28.5	0.6	8.0	0.9
16	19	0	31.60	0.39	0.62	22	8	43.8	0.7	8.1	0.9
17	19	0	22.17	0.40	0.62	22	8	59.7	0.7	8.1	0.9
18	19	0	12.38	0.41	0.62	22	9	16.1	0.7	8.1	0.9
19	19	0	2.24	0.43	0.62	22	9	33.0	0.7	8.1	0.9
20	18	59	51.75	0.44	0.62	22	9	50.4	0.7	8.1	0.9
21	18	59	40.93	0.46	0.62	22	10	8.2	0.8	8.1	0.9
22	18	59	29.77	0.47	0.62	22	10	26.6	0.8	8.1	0.9
23	18	59	18.27	0.49	0.62	22	10	45.5	0.8	8.1	0.9
24	18	59	6.45	0.50	0.62	22	11	4.8	0.8	8.1	0.9
25	18	58	54.30	0.51	0.62	22	11	24.6	0.8	8.2	0.9
26	18	58	41.83	0.53	0.62	22	11	44.8	0.9	8.2	0.9
27	18	58	29.06	0.54	0.62	22	12	5.4	0.9	8.2	0.9
28	18	58	15.98	0.55	0.62	22	12	26.5	0.9		
29	18	58	2.60	0.56	0.62	22	12	47.9	0.9		
30	18	57	48.93	0.58	0.62	22	13	9.8	0.9		
31	18	57	34.97	0.59	0.62	22	13	32.0	0.9		
32	18	57	20.73	-0.60	0.62	S. 22	13	54.6	-1.0		

JUNE, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	^h ^m ^s	^o ['] ["]		^h ^m	^o ['] ["]	^o ['] ["]	
1	18 57 29.26	S. 22 13 41.0	0.9638441	14 16.7	280 9 21.4	N. 0 31 20.7	1.0029994
2	18 57 14.87	22 14 3.9	.9634220	14 12.5	280 11 9.7	0 31 16.1	.0029972
3	18 57 0.19	22 14 27.1	.9630113	14 8.4	280 12 58.0	0 31 11.5	.0029950
4	18 56 45.25	22 14 50.6	.9626122	14 4.2	280 14 46.3	0 31 6.9	.0029928
5	18 56 30.05	22 15 14.5	.9622249	14 0.0	280 16 34.6	0 31 2.3	.0029906
6	18 56 14.59	22 15 38.7	.9618496	13 55.8	280 18 22.9	0 30 57.7	.0029884
7	18 55 58.89	22 16 3.1	.9614865	13 51.6	280 20 11.2	0 30 53.1	.0029861
8	18 55 42.95	22 16 27.9	.9611356	13 47.4	280 21 59.5	0 30 48.5	.0029839
9	18 55 26.79	22 16 53.0	.9607972	13 43.3	280 23 47.8	0 30 43.9	.0029816
10	18 55 10.40	22 17 18.3	.9604714	13 39.1	280 25 36.1	0 30 39.3	.0029794
11	18 54 53.81	22 17 43.9	.9601583	13 34.9	280 27 24.4	0 30 34.7	.0029771
12	18 54 37.01	22 18 9.6	.9598581	13 30.6	280 29 12.7	0 30 30.1	.0029749
13	18 54 20.02	22 18 35.6	.9595709	13 26.4	280 31 1.0	0 30 25.5	.0029726
14	18 54 2.84	22 19 1.8	.9592968	13 22.1	280 32 49.3	0 30 20.9	.0029703
15	18 53 45.49	22 19 28.2	.9590359	13 17.9	280 34 37.6	0 30 16.3	.0029680
16	18 53 27.96	22 19 54.7	.9587883	13 13.6	280 36 26.0	0 30 11.7	.0029657
17	18 53 10.27	22 20 21.4	.9585542	13 9.4	280 38 14.3	0 30 7.1	.0029634
18	18 52 32.44	22 20 48.2	.9583336	13 5.2	280 40 2.6	0 30 2.5	.0029610
19	18 52 34.46	22 21 15.1	.9581265	13 1.0	280 41 50.9	0 29 57.9	.0029587
20	18 52 16.34	22 21 42.1	.9579331	12 56.8	280 43 39.2	0 29 53.3	.0029564
21	18 51 58.11	22 22 9.2	.9577535	12 52.6	280 45 27.5	0 29 48.6	.0029540
22	18 51 39.76	22 22 36.4	.9575876	12 48.4	280 47 15.9	0 29 44.0	.0029517
23	18 51 21.31	22 23 3.6	.9574355	12 44.2	280 49 4.2	0 29 39.4	.0029493
24	18 51 2.76	22 23 30.9	.9572973	12 39.9	280 50 52.5	0 29 34.8	.0029470
25	18 50 44.13	22 23 58.1	.9571731	12 35.7	280 52 40.8	0 29 30.2	.0029446
26	18 50 25.41	22 24 25.4	.9570629	12 31.4	280 54 29.2	0 29 25.6	.0029423
27	18 50 6.63	22 24 52.8	.9569669	12 27.2	280 56 17.5	0 29 21.0	.0029399
28	18 49 47.78	22 25 20.1	.9568849	12 22.9	280 58 5.8	0 29 16.4	.0029375
29	18 49 28.87	22 25 47.4	.9568171	12 18.7	280 59 54.1	0 29 11.8	.0029351
30	18 49 9.92	22 26 14.8	.9567636	12 14.4	281 1 42.5	0 29 7.2	.0029327
31	18 48 50.94	S. 22 26 42.1	0.9567243	12 10.2	281 3 30.8	N. 0 29 2.5	1.0029303

JUNE, 1842.

At Transit over the Meridian of Greenwich.

Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi- diameter.	Hor. Par.
	^h ^m ^s	^s	^s	^o ['] ["]	["]	["]	["]
1	18 57 20.73	- 0.60	0.62	S. 22 13 54.6	- 1.0	8.2	0.9
2	18 57 6.21	0.61	0.62	22 14 17.6	1.0	8.2	0.9
3	18 56 51.42	0.62	0.62	22 14 42.9	1.0	8.2	0.9
4	18 56 36.37	0.63	0.62	22 15 4.6	1.0	8.2	0.9
5	18 56 21.06	0.64	0.63	22 15 22.6	1.0	8.3	0.9
6	18 56 5.51	0.65	0.63	22 15 52.9	1.0	8.3	0.9
7	18 55 49.72	0.66	0.63	22 16 17.5	1.0	8.3	0.9
8	18 55 33.70	0.67	0.63	22 16 42.4	1.0	8.3	0.9
9	18 55 17.45	0.68	0.63	22 17 7.5	1.1	8.3	0.9
10	18 55 0.99	0.69	0.63	22 17 32.9	1.1	8.3	0.9
11	18 54 44.33	0.70	0.63	22 17 58.5	1.1	8.3	0.9
12	18 54 27.47	0.71	0.63	22 18 24.3	1.1	8.3	0.9
13	18 54 10.42	0.71	0.63	22 18 50.3	1.1	8.3	0.9
14	18 53 53.19	0.72	0.63	22 19 16.5	1.1	8.3	0.9
15	18 53 35.79	0.73	0.63	22 19 42.9	1.1	8.3	0.9
16	18 53 18.23	0.74	0.63	22 20 9.4	1.1	8.3	0.9
17	18 53 0.51	0.74	0.63	22 20 36.1	1.1	8.3	0.9
18	18 52 42.64	0.75	0.63	22 21 2.9	1.1	8.3	0.9
19	18 52 24.64	0.75	0.63	22 21 29.8	1.1	8.3	0.9
20	18 52 6.51	0.76	0.63	22 21 56.8	1.1	8.3	0.9
21	18 51 48.27	0.76	0.63	22 22 23.8	1.1	8.3	0.9
22	18 51 29.92	0.76	0.63	22 22 50.9	1.1	8.3	0.9
23	18 51 11.47	0.77	0.63	22 23 18.0	1.1	8.3	0.9
24	18 50 52.93	0.77	0.64	22 23 45.2	1.1	8.3	0.9
25	18 50 34.31	0.78	0.64	22 24 12.4			0.9
26	18 50 15.61	0.78	0.64	22 24 39.7			0.9
27	18 49 56.85	0.78	0.64	22 25 6.9			0.9
28	18 49 38.03	0.79	0.64	22 25 34.2			0.9
29	18 49 19.16	0.79	0.64	22 26 1.5			0.9
30	18 49 0.24	0.79	0.64	22 26 28.7			0.9
31	18 48 41.30	- 0.79	0.64	S. 22 26 55.9	-		0.9

SATURN.

JULY, 1842.

MEAN TIME.

Geocentric.				Heliocentric.		
Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
<small>h m s</small>	<small>° ' "</small>		<small>h m</small>	<small>° ' "</small>	<small>° ' "</small>	
18 48 50·94	S. 22 26 42·1	0·9567243	12 10·2	281 3 30·8	N. 0 29 2·5	1·002930
18 48 31·93	22 27 9·3	·9566994	12 5·9	281 5 19·1	0 28 57·9	·002927
18 48 12·90	22 27 36·5	·9566887	12 1·7	281 7 7·5	0 28 53·3	·002925
18 47 53·87	22 28 3·7	·9566924	11 57·4	281 8 55·8	0 28 48·7	·002923
18 47 34·85	22 28 30·7	·9567105	11 53·2	281 10 44·1	0 28 44·1	·002920
18 47 15·84	22 28 57·7	·9567429	11 48·9	281 12 32·5	0 28 39·5	·002918
18 46 56·86	22 29 24·5	·9567896	11 44·7	281 14 20·8	0 28 34·9	·002915
18 46 37·91	22 29 51·2	·9568507	11 40·4	281 16 9·2	0 28 30·2	·002913
18 46 19·01	22 30 17·8	·9569261	11 36·2	281 17 57·5	0 28 25·6	·002910
18 46 0·16	22 30 44·2	·9570158	11 32·0	281 19 45·9	0 28 21·0	·002908
18 45 41·38	22 31 10·5	·9571198	11 27·8	281 21 34·2	0 28 16·4	·002905
18 45 22·67	22 31 36·6	·9572379	11 23·5	281 23 22·5	0 28 11·8	·002903
18 45 4·05	22 32 2·5	·9573702	11 19·3	281 25 10·9	0 28 7·1	·002900
18 44 45·53	22 32 28·3	·9575164	11 15·0	281 26 59·2	0 28 2·5	·002898
18 44 27·11	22 32 53·8	·9576766	11 10·8	281 28 47·6	0 27 57·9	·002895
18 44 8·80	22 33 19·2	·9578507	11 6·5	281 30 35·9	0 27 53·3	·002893
18 43 50·62	22 33 44·4	·9580385	11 2·3	281 32 24·3	0 27 48·7	·002890
18 43 32·57	22 34 9·3	·9582399	10 58·1	281 34 12·6	0 27 44·0	·002888
18 43 14·66	22 34 34·0	·9584548	10 53·9	281 36 1·0	0 27 39·4	·002885
18 42 56·90	22 34 58·5	·9586832	10 49·7	281 37 49·3	0 27 34·8	·002882
18 42 39·30	22 35 22·7	·9589249	10 45·5	281 39 37·7	0 27 30·2	·002880
18 42 21·87	22 35 46·7	·9591799	10 41·2	281 41 26·0	0 27 25·5	·002877
18 42 4·61	22 36 10·4	·9594480	10 37·0	281 43 14·3	0 27 20·9	·002875
18 41 47·53	22 36 33·9	·9597291	10 32·8	281 45 2·7	0 27 16·3	·002872
18 41 30·64	22 36 57·1	·9600230	10 28·6	281 46 51·0	0 27 11·7	·002869
18 41 13·95	22 37 20·0	·9603298	10 24·4	281 48 39·4	0 27 7·0	·002867
18 40 57·46	22 37 42·7	·9606493	10 20·2	281 50 27·7	0 27 2·4	·002864
18 40 41·19	22 38 5·1	·9609813	10 15·9	281 52 16·1	0 26 57·8	·002862
18 40 25·14	22 38 27·2	·9613257	10 11·7	281 54 4·4	0 26 53·2	·002859
18 40 9·32	22 38 49·1	·9616825	10 7·5	281 55 52·8	0 26 48·5	·002856
18 39 53·74	22 39 10·7	·9620514	10 3·3	281 57 41·1	0 26 43·9	·002854
18 39 38·40	S. 22 39 32·0	0·9624323	9 59·1	281 59 29·5	N. 0 26 39·3	1·002851

JULY, 1842.

At Transit over the Meridian of Greenwich.

MONTH	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi- diameter.	Hor. Par.
1	^h 18 ^m 48 ^s 41' 30	- 0' 79	0' 64	S. 22 26 55' 9	- 1' 1	8' 3	0' 9
2	18 48 22' 34	0' 79	0' 64	22 27 23' 1	1' 1	8' 3	0' 9
3	18 48 3' 37	0' 79	0' 64	22 27 50' 2	1' 1	8' 3	0' 9
4	18 47 44' 39	0' 79	0' 64	22 28 17' 2	1' 1	8' 3	0' 9
5	18 47 25' 43	0' 79	0' 64	22 28 44' 1	1' 1	8' 3	0' 9
6	18 47 6' 49	0' 79	0' 64	22 29 10' 9	1' 1	8' 3	0' 9
7	18 46 47' 58	0' 79	0' 64	22 29 37' 6	1' 1	8' 3	0' 9
8	18 46 28' 71	0' 79	0' 64	22 30 4' 2	1' 1	8' 3	0' 9
9	18 46 9' 89	0' 78	0' 64	22 30 30' 6	1' 1	8' 3	0' 9
10	18 45 51' 13	0' 78	0' 64	22 30 56' 8	1' 1	8' 3	0' 9
11	18 45 32' 44	0' 78	0' 64	22 31 22' 9	1' 1	8' 3	0' 9
12	18 45 13' 83	0' 77	0' 64	22 31 48' 9	1' 1	8' 3	0' 9
13	18 44 55' 30	0' 77	0' 64	22 32 14' 7	1' 1	8' 3	0' 9
14	18 44 36' 87	0' 77	0' 64	22 32 40' 3	1' 1	8' 3	0' 9
15	18 44 18' 56	0' 76	0' 64	22 33 5' 7	1' 1	8' 3	0' 9
16	18 44 0' 36	0' 76	0' 64	22 33 30' 9	1' 0	8' 3	0' 9
17	18 43 42' 29	0' 75	0' 64	22 33 55' 9	1' 0	8' 3	0' 9
18	18 43 24' 36	0' 74	0' 64	22 34 20' 6	1' 0	8' 3	0' 9
19	18 43 6' 58	0' 74	0' 64	22 34 45' 1	1' 0	8' 3	0' 9
20	18 42 48' 94	0' 73	0' 64	22 35 9' 5	1' 0	8' 3	0' 9
21	18 42 31' 47	0' 72	0' 64	22 35 33' 5	1' 0	8' 3	0' 9
22	18 42 14' 16	0' 72	0' 64	22 35 57' 3	1' 0	8' 3	0' 9
23	18 41 57' 03	0' 71	0' 64	22 36 20' 8	1' 0	8' 3	0' 9
24	18 41 40' 08	0' 70	0' 64	22 36 44' 1	1' 0	8' 3	0' 9
25	18 41 23' 32	0' 69	0' 64	22 37 7' 1	1' 0	8' 3	0' 9
26	18 41 6' 77	0' 69	0' 64	22 37 29' 9	0' 9	8' 3	0' 9
27	18 40 50' 42	0' 68	0' 64	22 37 52' 4	0' 9	8' 3	0' 9
28	18 40 34' 29	0' 67	0' 64	22 38 14' 6	0' 9	8' 3	0
29	18 40 18' 38	0' 66	0' 64	22 38 36' 6	0' 9	8' 3	0
30	18 40 2' 71	0' 65	0' 64	22 38 58' 3	0' 9	8' 3	0
31	18 39 47' 28	0' 64	0' 64	22 39 19' 7	0' 9	8' 3	0
32	18 39 32' 09	- 0' 63	0' 64	S. 22 39 40' 8	- 0' 9	8' 2	0

AUGUST, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
1	18 39 38.40	S. 22 39 32.0	0.9624323	9 59.1	281 59 29.5	N. 0 26 39.3	1.0028515
2	18 39 23.32	22 39 53.0	.9628250	9 55.0	282 1 17.8	0 26 34.6	.0028488
3	18 39 8.50	22 40 13.7	.9632295	9 50.8	282 3 6.2	0 26 30.0	.0028461
4	18 38 53.95	22 40 34.1	.9636456	9 46.7	282 4 54.5	0 26 25.4	.0028433
5	18 38 39.68	22 40 54.1	.9640730	9 42.5	282 6 42.9	0 26 20.7	.0028406
6	18 38 25.69	22 41 13.9	.9645116	9 38.4	282 8 31.2	0 26 16.1	.0028381
7	18 38 12.00	22 41 33.3	.9649612	9 34.2	282 10 19.5	0 26 11.5	.0028354
8	18 37 58.60	22 41 52.5	.9654216	9 30.0	282 12 7.9	0 26 6.8	.0028327
9	18 37 45.51	22 42 11.4	.9658926	9 25.8	282 13 56.2	0 26 2.2	.0028300
10	18 37 32.73	22 42 29.9	.9663740	9 21.7	282 15 44.6	0 25 57.6	.0028273
11	18 37 20.28	22 42 48.1	.9668656	9 17.6	282 17 32.9	0 25 52.9	.0028246
12	18 37 8.14	22 43 6.0	.9673672	9 13.5	282 19 21.2	0 25 48.3	.0028218
13	18 36 56.34	22 43 23.5	.9678785	9 9.4	282 21 9.6	0 25 43.7	.0028191
14	18 36 44.87	22 43 40.7	.9683993	9 5.3	282 22 57.9	0 25 39.0	.0028164
15	18 36 33.75	22 43 57.5	.9689295	9 1.1	282 24 46.3	0 25 34.4	.0028136
16	18 36 22.98	22 44 14.0	.9694688	8 57.0	282 26 34.6	0 25 29.8	.0028109
17	18 36 12.55	22 44 30.2	.9700169	8 52.9	282 28 22.9	0 25 25.1	.0028081
18	18 36 2.48	22 44 46.0	.9705737	8 48.8	282 30 11.3	0 25 20.5	.0028053
19	18 35 52.77	22 45 1.5	.9711390	8 44.7	282 31 59.6	0 25 15.9	.0028025
20	18 35 43.42	22 45 16.6	.9717125	8 40.6	282 33 48.0	0 25 11.2	.0027997
21	18 35 34.44	22 45 31.5	.9722941	8 36.5	282 35 36.3	0 25 6.6	.0027969
22	18 35 25.82	22 45 46.0	.9728835	8 32.5	282 37 24.6	0 25 2.0	.0027941
23	18 35 17.58	22 46 0.2	.9734805	8 28.4	282 39 13.0	0 24 57.3	.0027913
24	18 35 9.72	22 46 14.1	.9740849	8 24.4	282 41 1.3	0 24 52.7	.0027885
25	18 35 2.24	22 46 27.6	.9746966	8 20.3	282 42 49.7	0 24 48.0	.0027857
26	18 34 55.15	22 46 40.8	.9753153	8 16.3	282 44 38.0	0 24 43.4	.0027829
27	18 34 48.44	22 46 53.6	.9759408	8 12.2	282 46 26.3	0 24 38.8	.0027800
28	18 34 42.14	22 47 6.1	.9765729	8 8.2	282 48 14.7	0 24 34.1	.0027772
29	18 34 36.23	22 47 18.3	.9772114	8 4.2	282 50 3.0	0 24 29.5	.0027743
30	18 34 30.73	22 47 30.1	.9778560	8 0.2	282 51 51.4	0 24 24.8	.0027715
31	18 34 25.63	22 47 41.5	.9785066	7 56.2	282 53 39.7	0 24 20.2	.0027686
32	18 34 20.93	S. 22 47 52.7	0.9791628	7 52.2	282 55 28.1	N. 0 24 15.5	1.0027657

AUGUST, 1842.

At Transit over the Meridian of Greenwich.

Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi- diameter.	Hor. Par.
	h m s	s	s	o ' "	"	"	"
1	18 39 32.09	-0.63	0.64	S. 22 39 40.8	-0.9	8.2	0.9
2	18 39 17.16	0.62	0.64	22 40 1.6	0.9	8.2	0.9
3	18 39 2.50	0.61	0.64	22 40 22.1	0.9	8.2	0.9
4	18 38 48.11	0.59	0.64	22 40 42.3	0.8	8.2	0.9
5	18 38 33.99	0.58	0.64	22 41 2.1	0.8	8.2	0.9
6	18 38 20.16	0.57	0.64	22 41 21.7	0.8	8.2	0.9
7	18 38 6.62	0.56	0.64	22 41 41.0	0.8	8.2	0.9
8	18 37 53.38	0.55	0.64	22 42 0.0	0.8	8.2	0.9
9	18 37 40.45	0.53	0.64	22 42 18.7	0.8	8.2	0.9
10	18 37 27.83	0.52	0.64	22 42 37.0	0.8	8.2	0.9
11	18 37 15.53	0.51	0.64	22 42 55.0	0.7	8.2	0.9
12	18 37 3.56	0.49	0.63	22 43 12.7	0.7	8.1	0.9
13	18 36 51.92	0.48	0.63	22 43 30.0	0.7	8.1	0.9
14	18 36 40.61	0.46	0.63	22 43 47.1	0.7	8.1	0.9
15	18 36 29.65	0.45	0.63	22 44 3.7	0.7	8.1	0.9
16	18 36 19.04	0.43	0.63	22 44 20.0	0.7	8.1	0.9
17	18 36 8.78	0.42	0.63	22 44 36.0	0.7	8.1	0.9
18	18 35 58.87	0.41	0.63	22 44 51.7	0.6	8.1	0.9
19	18 35 49.32	0.39	0.63	22 45 7.0	0.6	8.1	0.9
20	18 35 40.13	0.37	0.63	22 45 22.0	0.6	8.1	0.9
21	18 35 31.31	0.36	0.63	22 45 36.7	0.6	8.0	0.9
22	18 35 22.85	0.34	0.63	22 45 51.0	0.6	8.0	0.9
23	18 35 14.77	0.33	0.63	22 46 5.1	0.6	8.0	0.9
24	18 35 7.06	0.31	0.62	22 46 18.8	0.6	8.0	0.9
25	18 34 59.74	0.30	0.62	22 46 32.2	0.6	8.0	0.9
26	18 34 52.80	0.28	0.62	22 46 45.2	0.5	8.0	0.9
27	18 34 46.25	0.26	0.62	22 46 57.9	0.5	8.0	0.9
28	18 34 40.10	0.25	0.62	22 47 10.2	0.5	8.0	0.9
29	18 34 34.34	0.23	0.62	22 47 22.2	0.5	8.0	0.9
30	18 34 28.98	0.21	0.62	22 47 33.9	0.5	8.0	0.9
31	18 34 24.03	0.20	0.62	22 47 45.2	0.5	8.0	0.9
32	18 34 19.49	-0.18	0.62	S. 22 47 56.2	-0.5	8.0	0.9

SEPTEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	18 34 20 ^{h m s} .93	S. 22 47 52 ^{o ' " N} .7	0.9791628	7 52 ^{h m} .2	282 55 28 ^{o ' " N} .1	N. 0 24 15 ^{o ' " N} .5	1.002765
2	18 34 16 ^{h m s} .65	22 48 3 ^{o ' " N} .5	.9798245	7 48 ^{h m} .1	282 57 16 ^{o ' " N} .4	0 24 10 ^{o ' " N} .9	.002762
3	18 34 12 ^{h m s} .78	22 48 14 ^{o ' " N} .0	.9804914	7 44 ^{h m} .1	282 59 4 ^{o ' " N} .7	0 24 6 ^{o ' " N} .3	.002760
4	18 34 9 ^{h m s} .32	22 48 24 ^{o ' " N} .1	.9811634	7 40 ^{h m} .1	283 0 53 ^{o ' " N} .1	0 24 1 ^{o ' " N} .6	.002757
5	18 34 6 ^{h m s} .28	22 48 33 ^{o ' " N} .9	.9818401	7 36 ^{h m} .1	283 2 41 ^{o ' " N} .4	0 23 57 ^{o ' " N} .0	.002754
6	18 34 3 ^{h m s} .65	22 48 43 ^{o ' " N} .3	.9825212	7 32 ^{h m} .1	283 4 29 ^{o ' " N} .8	0 23 52 ^{o ' " N} .3	.002751
7	18 34 1 ^{h m s} .45	22 48 52 ^{o ' " N} .4	.9832066	7 28 ^{h m} .2	283 6 18 ^{o ' " N} .1	0 23 47 ^{o ' " N} .7	.002748
8	18 33 59 ^{h m s} .67	22 49 1 ^{o ' " N} .1	.9838961	7 24 ^{h m} .2	283 8 6 ^{o ' " N} .5	0 23 43 ^{o ' " N} .0	.002745
9	18 33 58 ^{h m s} .31	22 49 9 ^{o ' " N} .4	.9845893	7 20 ^{h m} .3	283 9 54 ^{o ' " N} .8	0 23 38 ^{o ' " N} .4	.002742
10	18 33 57 ^{h m s} .38	22 49 17 ^{o ' " N} .4	.9852861	7 16 ^{h m} .3	283 11 43 ^{o ' " N} .2	0 23 33 ^{o ' " N} .7	.002739
11	18 33 56 ^{h m s} .87	22 49 25 ^{o ' " N} .0	.9859861	7 12 ^{h m} .4	283 13 31 ^{o ' " N} .5	0 23 29 ^{o ' " N} .1	.002736
12	18 33 56 ^{h m s} .79	22 49 32 ^{o ' " N} .3	.9866892	7 8 ^{h m} .4	283 15 19 ^{o ' " N} .9	0 23 24 ^{o ' " N} .4	.002733
13	18 33 57 ^{h m s} .13	22 49 39 ^{o ' " N} .2	.9873952	7 4 ^{h m} .5	283 17 8 ^{o ' " N} .2	0 23 19 ^{o ' " N} .8	.002730
14	18 33 57 ^{h m s} .90	22 49 45 ^{o ' " N} .7	.9881037	7 0 ^{h m} .6	283 18 56 ^{o ' " N} .6	0 23 15 ^{o ' " N} .1	.002727
15	18 33 59 ^{h m s} .09	22 49 51 ^{o ' " N} .9	.9888146	6 56 ^{h m} .7	283 20 44 ^{o ' " N} .9	0 23 10 ^{o ' " N} .5	.002725
16	18 34 0 ^{h m s} .71	22 49 57 ^{o ' " N} .7	.9895276	6 52 ^{h m} .8	283 22 33 ^{o ' " N} .3	0 23 5 ^{o ' " N} .8	.002722
17	18 34 2 ^{h m s} .76	22 50 3 ^{o ' " N} .2	.9902426	6 48 ^{h m} .9	283 24 21 ^{o ' " N} .7	0 23 1 ^{o ' " N} .2	.002719
18	18 34 5 ^{h m s} .23	22 50 8 ^{o ' " N} .3	.9909593	6 45 ^{h m} .0	283 26 10 ^{o ' " N} .0	0 22 56 ^{o ' " N} .5	.002716
19	18 34 8 ^{h m s} .12	22 50 13 ^{o ' " N} .0	.9916775	6 41 ^{h m} .2	283 27 58 ^{o ' " N} .4	0 22 51 ^{o ' " N} .8	.002713
20	18 34 11 ^{h m s} .44	22 50 17 ^{o ' " N} .4	.9923971	6 37 ^{h m} .3	283 29 46 ^{o ' " N} .7	0 22 47 ^{o ' " N} .2	.002710
21	18 34 15 ^{h m s} .18	22 50 21 ^{o ' " N} .4	.9931178	6 33 ^{h m} .5	283 31 35 ^{o ' " N} .1	0 22 42 ^{o ' " N} .5	.002707
22	18 34 19 ^{h m s} .34	22 50 25 ^{o ' " N} .1	.9938394	6 29 ^{h m} .6	283 33 23 ^{o ' " N} .5	0 22 37 ^{o ' " N} .9	.002704
23	18 34 23 ^{h m s} .93	22 50 28 ^{o ' " N} .4	.9945617	6 25 ^{h m} .8	283 35 11 ^{o ' " N} .8	0 22 33 ^{o ' " N} .2	.002701
24	18 34 28 ^{h m s} .93	22 50 31 ^{o ' " N} .3	.9952846	6 21 ^{h m} .9	283 37 0 ^{o ' " N} .2	0 22 28 ^{o ' " N} .6	.002698
25	18 34 34 ^{h m s} .36	22 50 33 ^{o ' " N} .8	.9960078	6 18 ^{h m} .1	283 38 48 ^{o ' " N} .6	0 22 23 ^{o ' " N} .9	.002695
26	18 34 40 ^{h m s} .21	22 50 36 ^{o ' " N} .0	.9967311	6 14 ^{h m} .2	283 40 37 ^{o ' " N} .0	0 22 19 ^{o ' " N} .3	.002691
27	18 34 46 ^{h m s} .48	22 50 37 ^{o ' " N} .8	.9974544	6 10 ^{h m} .4	283 42 25 ^{o ' " N} .3	0 22 14 ^{o ' " N} .6	.002688
28	18 34 53 ^{h m s} .17	22 50 39 ^{o ' " N} .2	.9981774	6 6 ^{h m} .6	283 44 13 ^{o ' " N} .7	0 22 9 ^{o ' " N} .9	.002685
29	18 35 0 ^{h m s} .28	22 50 40 ^{o ' " N} .2	.9989000	6 2 ^{h m} .8	283 46 2 ^{o ' " N} .1	0 22 5 ^{o ' " N} .3	.002682
30	18 35 7 ^{h m s} .80	22 50 40 ^{o ' " N} .9	.9996218	5 59 ^{h m} .0	283 47 50 ^{o ' " N} .4	0 22 0 ^{o ' " N} .6	.002679
31	18 35 15 ^{h m s} .74	S. 22 50 41 ^{o ' " N} .1	1.0003428	5 55 ^{h m} .1	283 49 38 ^{o ' " N} .8	N. 0 21 56 ^{o ' " N} .0	1.002676

SEPTEMBER, 1842.

At Transit over the Meridian of Greenwich.

Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi- diameter.	Hor. Par.
1	^h 18 ^m 34 ^s 19·49	- 0·18	0·62	S. 22 47 56·2	- 0·5	7·9	0·9
2	18 34 15·35	0·16	0·62	22 48 6·9	0·4	7·9	0·9
3	18 34 11·62	0·15	0·62	22 48 17·2	0·4	7·9	0·9
4	18 34 8·30	0·13	0·62	22 48 27·2	0·4	7·9	0·9
5	18 34 5·39	0·11	0·62	22 48 36·9	0·4	7·9	0·9
6	18 34 2·91	0·09	0·61	22 48 46·2	0·4	7·8	0·9
7	18 34 0·84	0·08	0·61	22 48 55·1	0·4	7·8	0·9
8	18 33 59·20	0·06	0·61	22 49 3·7	0·4	7·8	0·9
9	18 33 57·98	0·04	0·61	22 49 11·9	0·3	7·8	0·9
10	18 33 57·18	0·02	0·61	22 49 19·7	0·3	7·8	0·9
11	18 33 56·80	- 0·01	0·61	22 49 27·2	0·3	7·8	0·9
12	18 33 56·84	+ 0·01	0·61	22 49 34·3	0·3	7·8	0·9
13	18 33 57·31	0·03	0·60	22 49 41·1	0·3	7·7	0·9
14	18 33 58·20	0·05	0·60	22 49 47·5	0·3	7·7	0·9
15	18 33 59·51	0·06	0·60	22 49 53·5	0·2	7·7	0·9
16	18 34 1·25	0·08	0·60	22 49 59·2	0·2	7·7	0·9
17	18 34 3·42	0·10	0·60	22 50 4·6	0·2	7·7	0·9
18	18 34 6·00	0·12	0·60	22 50 9·6	0·2	7·7	0·9
19	18 34 9·00	0·13	0·60	22 50 14·2	0·2	7·7	0·9
20	18 34 12·43	0·15	0·60	22 50 18·5	0·2	7·7	0·9
21	18 34 16·28	0·17	0·60	22 50 22·4	0·2	7·6	0·9
22	18 34 20·54	0·19	0·60	22 50 26·0	0·1	7·6	0·9
23	18 34 25·23	0·20	0·60	22 50 29·2	0·1	7·6	0·9
24	18 34 30·33	0·22	0·60	22 50 32·0	0·1		0·9
25	18 34 35·85	0·24	0·60	22 50 34·4	0·1		9
26	18 34 41·80	0·26	0·59	22 50 36·5	0·1		9
27	18 34 48·16	0·27	0·59	22 50 38·2	- 0·1)
28	18 34 54·94	0·29	0·59	22 50 39·5)
29	18 35 2·13	0·31	0·59	22 50 40·4)
30	18 35 9·74	0·33	0·59	22 50 41·0)
31	18 35 17·76	+ 0·34	0·59	S. 22 50 41·1)

OCTOBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ' "		h m	° ' "	° ' "	
1	18 35 15.74	S. 22 50 41.1	1.0003428	5 55.1	283 49 38.8	N. 0 21 56.0	1.0026766
2	18 35 24.09	22 50 40.9	.0010627	5 51.3	283 51 27.2	0 21 51.3	.0026735
3	18 35 32.85	22 50 40.3	.0017813	5 47.6	283 53 15.6	0 21 46.6	.0026704
4	18 35 42.02	22 50 39.3	.0024984	5 43.8	283 55 4.0	0 21 42.0	.0026673
5	18 35 51.60	22 50 37.9	.0032137	5 40.1	283 56 52.3	0 21 37.3	.0026642
6	18 36 1.59	22 50 36.0	.0039271	5 36.3	283 58 40.7	0 21 32.7	.0026610
7	18 36 11.98	22 50 33.8	.0046384	5 32.5	284 0 29.1	0 21 28.0	.0026579
8	18 36 22.77	22 50 31.1	.0053474	5 28.7	284 2 17.5	0 21 23.4	.0026548
9	18 36 33.96	22 50 28.0	.0060538	5 25.0	284 4 5.9	0 21 18.7	.0026516
10	18 36 45.56	22 50 24.5	.0067576	5 21.2	284 5 54.3	0 21 14.0	.0026485
11	18 36 57.54	22 50 20.5	.0074584	5 17.5	284 7 42.7	0 21 9.4	.0026453
12	18 37 9.92	22 50 16.2	.0081562	5 13.7	284 9 31.1	0 21 4.7	.0026421
13	18 37 22.68	22 50 11.4	.0088507	5 10.0	284 11 19.5	0 21 0.0	.0026389
14	18 37 35.82	22 50 6.1	.0095418	5 6.3	284 13 7.9	0 20 55.4	.0026357
15	18 37 49.34	22 50 0.4	.0102293	5 2.6	284 14 56.3	0 20 50.7	.0026325
16	18 38 3.24	22 49 54.3	.0109131	4 58.9	284 16 44.7	0 20 46.1	.0026293
17	18 38 17.51	22 49 47.7	.0115930	4 55.2	284 18 33.1	0 20 41.4	.0026261
18	18 38 32.16	22 49 40.7	.0122689	4 51.5	284 20 21.5	0 20 36.7	.0026229
19	18 38 47.17	22 49 33.2	.0129406	4 47.9	284 22 10.0	0 20 32.1	.0026196
20	18 39 2.54	22 49 25.3	.0136080	4 44.2	284 23 58.4	0 20 27.4	.0026164
21	18 39 18.27	22 49 16.9	.0142710	4 40.6	284 25 46.8	0 20 22.7	.0026131
22	18 39 34.36	22 49 8.1	.0149293	4 36.9	284 27 35.2	0 20 18.1	.0026098
23	18 39 50.80	22 48 58.8	.0155829	4 33.3	284 29 23.7	0 20 13.4	.0026066
24	18 40 7.60	22 48 49.0	.0162316	4 29.6	284 31 12.1	0 20 8.7	.0026033
25	18 40 24.74	22 48 38.7	.0168752	4 25.9	284 33 0.5	0 20 4.1	.0026000
26	18 40 42.23	22 48 28.0	.0175137	4 22.2	284 34 48.9	0 19 59.4	.0025967
27	18 41 0.06	22 48 16.8	.0181468	4 18.6	284 36 37.4	0 19 54.7	.0025934
28	18 41 18.23	22 48 5.0	.0187745	4 15.0	284 38 25.8	0 19 50.1	.0025901
29	18 41 36.73	22 47 52.8	.0193965	4 11.4	284 40 14.3	0 19 45.4	.0025868
30	18 41 55.57	22 47 40.0	.0200128	4 7.8	284 42 2.7	0 19 40.7	.0025835
31	18 42 14.73	22 47 26.8	.0206231	4 4.2	284 43 51.1	0 19 36.1	.0025802
32	18 42 34.22	S. 22 47 13.0	1.0212274	4 0.5	284 45 39.6	N. 0 19 31.4	1.0025768

OCTOBER, 1842.

At Transit over the Meridian of Greenwich.

Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 18 ^m 35 ^s 17.76	+ 0.34	0.59	S. 22 50 41.1	0.0	7.5	0.9
2	18 35 26.19	0.36	0.59	22 50 40.8	0.0	7.5	0.9
3	18 35 35.03	0.38	0.59	22 50 40.1	0.0	7.5	0.9
4	18 35 44.87	0.39	0.59	22 50 39.0	+ 0.1	7.5	0.9
5	18 35 53.92	0.41	0.58	22 50 37.5	0.1	7.4	0.9
6	18 36 3.97	0.43	0.58	22 50 35.5	0.1	7.4	0.8
7	18 36 14.42	0.44	0.58	22 50 33.2	0.1	7.4	0.8
8	18 36 25.28	0.46	0.58	22 50 30.4	0.1	7.4	0.8
9	18 36 36.54	0.48	0.58	22 50 27.2	0.1	7.4	0.8
10	18 36 48.19	0.49	0.58	22 50 23.6	0.2	7.4	0.8
11	18 37 0.24	0.51	0.58	22 50 19.6	0.2	7.4	0.8
12	18 37 12.67	0.53	0.57	22 50 15.1	0.2	7.3	0.8
13	18 37 25.48	0.54	0.57	22 50 10.2	0.2	7.3	0.8
14	18 37 38.67	0.56	0.57	22 50 4.9	0.2	7.3	0.8
15	18 37 52.24	0.57	0.57	22 49 59.1	0.2	7.3	0.8
16	18 38 6.18	0.59	0.57	22 49 52.9	0.3	7.3	0.8
17	18 38 20.49	0.60	0.57	22 49 46.3	0.3	7.3	0.8
18	18 38 35.17	0.62	0.57	22 49 39.2	0.3	7.3	0.8
19	18 38 50.21	0.63	0.57	22 49 31.6	0.3	7.3	0.8
20	18 39 5.61	0.65	0.57	22 49 23.6	0.3	7.3	0.8
21	18 39 21.37	0.66	0.57	22 49 15.2	0.4	7.2	0.8
22	18 39 37.49	0.68	0.57	22 49 6.3	0.4	7.2	0.8
23	18 39 53.96	0.69	0.57	22 48 56.9	0.4	7.2	0.8
24	18 40 10.78	0.71	0.57	22 48 47.1	0.4	7.2	0.8
25	18 40 27.94	0.72	0.57	22 48 36.2	0.4	7.2	0.8
26	18 40 45.45	0.74	0.57	22 48 26.0	0.5	7.2	0.8
27	18 41 3.30	0.75	0.57	22 48 14.7	0.5	7.2	0.8
28	18 41 21.48	0.76	0.56	22 48 2.9	0.5	7.2	0.8
29	18 41 40.00	0.78	0.56	22 47 50.5	0.5	7.2	0.8
30	18 41 58.85	0.79	0.56	22 47 37.7	0.5	7.1	0.8
31	18 42 18.02	0.81	0.56	22 47 24.4	0.6	7.1	0.8
32	18 42 37.51	+ 0.82	0.56	S. 22 47 10.6	+ 0.6	7.1	0.8

NOVEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	o ' "		h m	o ' "	o ' "	
1	18 42 34.22	S. 22 47 13.0	1.0212274	4 0.5	284 45 39.6	N. 0 19 31.4	1.0025768
2	18 42 54.03	22 46 58.7	.0218255	3 56.9	284 47 28.1	0 19 26.7	.0025734
3	18 43 14.15	22 46 44.0	.0224172	3 53.3	284 49 16.5	0 19 22.1	.0025701
4	18 43 34.58	22 46 28.7	.0230025	3 49.7	284 51 5.0	0 19 17.4	.0025667
5	18 43 55.32	22 46 12.8	.0235812	3 46.1	284 52 53.5	0 19 12.7	.0025633
6	18 44 16.36	22 45 56.5	.0241530	3 42.6	284 54 41.9	0 19 8.0	.0025599
7	18 44 37.70	22 45 39.6	.0247180	3 39.0	284 56 30.4	0 19 3.4	.0025566
8	18 44 59.33	22 45 22.2	.0252759	3 35.5	284 58 18.9	0 18 58.7	.0025532
9	18 45 21.25	22 45 4.2	.0258267	3 31.9	285 0 7.4	0 18 54.0	.0025497
10	18 45 43.45	22 44 45.7	.0263703	3 28.4	285 1 55.9	0 18 49.3	.0025463
11	18 46 5.93	22 44 26.7	.0269065	3 24.8	285 3 44.3	0 18 44.7	.0025429
12	18 46 28.68	22 44 7.2	.0274353	3 21.2	285 5 32.8	0 18 40.0	.0025395
13	18 46 51.70	22 43 47.1	.0279566	3 17.6	285 7 21.3	0 18 35.3	.0025361
14	18 47 14.98	22 43 26.5	.0284703	3 14.1	285 9 9.8	0 18 30.6	.0025326
15	18 47 38.53	22 43 5.4	.0289763	3 10.5	285 10 58.3	0 18 26.0	.0025292
16	18 48 2.33	22 42 43.8	.0294745	3 6.9	285 12 46.8	0 18 21.3	.0025257
17	18 48 26.38	22 42 21.6	.0299648	3 3.4	285 14 35.3	0 18 16.6	.0025223
18	18 48 50.67	22 41 58.9	.0304471	2 59.9	285 16 23.8	0 18 11.9	.0025188
19	18 49 15.21	22 41 35.6	.0309215	2 56.4	285 18 12.3	0 18 7.3	.0025153
20	18 49 39.99	22 41 11.8	.0313878	2 52.9	285 20 0.9	0 18 2.6	.0025118
21	18 50 5.00	22 40 47.4	.0318458	2 49.4	285 21 49.4	0 17 57.9	.0025083
22	18 50 30.24	22 40 22.4	.0322956	2 45.9	285 23 37.9	0 17 53.2	.0025048
23	18 50 55.70	22 39 56.9	.0327369	2 42.4	285 25 26.4	0 17 48.5	.0025013
24	18 51 21.38	22 39 30.8	.0331698	2 38.9	285 27 14.9	0 17 43.9	.0024978
25	18 51 47.28	22 39 4.2	.0335942	2 35.3	285 29 3.5	0 17 39.2	.0024943
26	18 52 13.39	22 38 37.0	.0340099	2 31.8	285 30 52.0	0 17 34.5	.0024908
27	18 52 39.71	22 38 9.2	.0344169	2 28.3	285 32 40.5	0 17 29.8	.0024872
28	18 53 6.23	22 37 40.9	.0348151	2 24.8	285 34 29.1	0 17 25.1	.0024837
29	18 53 32.95	22 37 12.0	.0352044	2 21.3	285 36 17.6	0 17 20.5	.0024802
30	18 53 59.86	22 36 42.5	.0355846	2 17.9	285 38 6.2	0 17 15.8	.0024766
31	18 54 26.96	S. 22 36 12.5	1.0359558	2 14.4	285 39 54.7	N. 0 17 11.1	1.0024730

NOVEMBER, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	18 42 37.51	+ 0.82	0.56	S. 22 47 10.6	+ 0.6	7.1	0.8
2	18 42 57.32	0.83	0.56	22 46 56.3	0.6	7.1	0.8
3	18 43 17.44	0.84	0.56	22 46 41.5	0.6	7.1	0.8
4	18 43 37.87	0.86	0.56	22 46 26.2	0.7	7.1	0.8
5	18 43 58.61	0.87	0.56	22 46 10.3	0.7	7.1	0.8
6	18 44 19.64	0.88	0.56	22 45 53.9	0.7	7.1	0.8
7	18 44 40.97	0.89	0.56	22 45 37.0	0.7	7.1	0.8
8	18 45 2.59	0.91	0.56	22 45 19.5	0.7	7.1	0.8
9	18 45 24.49	0.92	0.55	22 45 1.5	0.8	7.0	0.8
10	18 45 46.68	0.93	0.55	22 44 43.0	0.8	7.0	0.8
11	18 46 9.14	0.94	0.55	22 44 24.0	0.8	7.0	0.8
12	18 46 31.87	0.95	0.55	22 44 4.4	0.8	7.0	0.8
13	18 46 54.87	0.96	0.55	22 43 44.3	0.8	7.0	0.8
14	18 47 18.13	0.97	0.55	22 43 23.7	0.9	7.0	0.8
15	18 47 41.65	0.99	0.55	22 43 2.6	0.9	7.0	0.8
16	18 48 5.43	1.00	0.55	22 42 40.9	0.9	7.0	0.8
17	18 48 29.46	1.01	0.55	22 42 18.7	0.9	7.0	0.8
18	18 48 53.73	1.02	0.55	22 41 56.0	1.0	7.0	0.8
19	18 49 18.24	1.03	0.55	22 41 32.7	1.0	7.0	0.8
20	18 49 42.98	1.04	0.54	22 41 8.9	1.0	7.0	0.8
21	18 50 7.96	1.05	0.54	22 40 44.5	1.0	7.0	0.8
22	18 50 33.16	1.05	0.54	22 40 19.3	1.1	7.0	0.8
23	18 50 58.59	1.06	0.54	22 39 54.0	1.1	7.0	0.8
24	18 51 24.23	1.07	0.54	22 39 27.9	1	7.0	0.8
25	18 51 50.09	1.08	0.54	22 39 1.3			0.8
26	18 52 16.17	1.09	0.54	22 38 34.1			0.8
27	18 52 42.45	1.10	0.54	22 38 6.3			0.8
28	18 53 8.92	1.11	0.54	22 37 38.0			8
29	18 53 35.59	1.12	0.54	22 37 9.1			8
30	18 54 2.46	1.12	0.54	22 36 39.6			8
31	18 54 29.51	+ 1.13	0.54	S. 22 36. 9.6	+		

DECEMBER, 1842.

MEAN TIME.

DAY OF THE MONTH.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	18 54 26 ^{h m s} .96	S. 22 36 12 ^{o ' "} .5	1.0359558	2 14.4	285 39 54 ^{o ' "} .7	N. 0 17 11 ^{o ' "} .1	1.0024730
2	18 54 54 ^{h m s} .24	22 35 41 ^{o ' "} .9	.0363178	2 11.0	285 41 43 ^{o ' "} .3	0 17 6 ^{o ' "} .4	.0024694
3	18 55 21 ^{h m s} .70	22 35 10 ^{o ' "} .8	.0366706	2 7.5	285 43 31 ^{o ' "} .8	0 17 1 ^{o ' "} .7	.0024659
4	18 55 49 ^{h m s} .34	22 34 39 ^{o ' "} .1	.0370141	2 4.1	285 45 20 ^{o ' "} .4	0 16 57 ^{o ' "} .1	.0024623
5	18 56 17 ^{h m s} .14	22 34 6 ^{o ' "} .9	.0373482	2 0.6	285 47 8 ^{o ' "} .9	0 16 52 ^{o ' "} .4	.0024587
6	18 56 45 ^{h m s} .10	22 33 34 ^{o ' "} .1	.0376729	1 57.1	285 48 57 ^{o ' "} .3	0 16 47 ^{o ' "} .7	.0024551
7	18 57 13 ^{h m s} .22	22 33 0 ^{o ' "} .8	.0379881	1 53.6	285 50 46 ^{o ' "} .1	0 16 43 ^{o ' "} .0	.0024515
8	18 57 41 ^{h m s} .49	22 32 26 ^{o ' "} .9	.0382938	1 50.2	285 52 34 ^{o ' "} .6	0 16 38 ^{o ' "} .3	.0024479
9	18 58 9 ^{h m s} .91	22 31 52 ^{o ' "} .5	.0385900	1 46.7	285 54 23 ^{o ' "} .2	0 16 33 ^{o ' "} .6	.0024443
0	18 58 38 ^{h m s} .46	22 31 17 ^{o ' "} .5	.0388765	1 43.3	285 56 11 ^{o ' "} .8	0 16 29 ^{o ' "} .0	.0024407
1	18 59 7 ^{h m s} .15	22 30 41 ^{o ' "} .9	.0391534	1 39.8	285 58 0 ^{o ' "} .4	0 16 24 ^{o ' "} .3	.0024371
2	18 59 35 ^{h m s} .96	22 30 5 ^{o ' "} .9	.0394206	1 36.3	285 59 48 ^{o ' "} .9	0 16 19 ^{o ' "} .6	.0024334
3	19 0 4 ^{h m s} .90	22 29 29 ^{o ' "} .3	.0396780	1 32.8	286 1 37 ^{o ' "} .5	0 16 14 ^{o ' "} .9	.0024298
4	19 0 33 ^{h m s} .96	22 28 52 ^{o ' "} .2	.0399257	1 29.4	286 3 26 ^{o ' "} .1	0 16 10 ^{o ' "} .2	.0024262
5	19 1 3 ^{h m s} .12	22 28 14 ^{o ' "} .6	.0401636	1 25.9	286 5 14 ^{o ' "} .7	0 16 5 ^{o ' "} .5	.0024225
6	19 1 32 ^{h m s} .40	22 27 36 ^{o ' "} .4	.0403917	1 22.5	286 7 3 ^{o ' "} .3	0 16 0 ^{o ' "} .8	.0024188
7	19 2 1 ^{h m s} .79	22 26 57 ^{o ' "} .8	.0406099	1 19.0	286 8 51 ^{o ' "} .9	0 15 56 ^{o ' "} .1	.0024152
8	19 2 31 ^{h m s} .27	22 26 18 ^{o ' "} .6	.0408182	1 15.6	286 10 40 ^{o ' "} .4	0 15 51 ^{o ' "} .5	.0024115
9	19 3 0 ^{h m s} .85	22 25 38 ^{o ' "} .9	.0410166	1 12.1	286 12 29 ^{o ' "} .0	0 15 46 ^{o ' "} .8	.0024078
0	19 3 30 ^{h m s} .53	22 24 58 ^{o ' "} .7	.0412051	1 8.7	286 14 17 ^{o ' "} .6	0 15 42 ^{o ' "} .1	.0024041
1	19 4 0 ^{h m s} .29	22 24 18 ^{o ' "} .0	.0413837	1 5.2	286 16 6 ^{o ' "} .2	0 15 37 ^{o ' "} .4	.0024004
2	19 4 30 ^{h m s} .13	22 23 36 ^{o ' "} .7	.0415522	1 1.8	286 17 54 ^{o ' "} .8	0 15 32 ^{o ' "} .7	.0023967
3	19 5 0 ^{h m s} .06	22 22 55 ^{o ' "} .0	.0417107	0 58.3	286 19 43 ^{o ' "} .4	0 15 28 ^{o ' "} .0	.0023930
4	19 5 30 ^{h m s} .06	22 22 12 ^{o ' "} .8	.0418591	0 54.9	286 21 32 ^{o ' "} .0	0 15 23 ^{o ' "} .3	.0023893
5	19 6 0 ^{h m s} .12	22 21 30 ^{o ' "} .1	.0419974	0 51.5	286 23 20 ^{o ' "} .6	0 15 18 ^{o ' "} .6	.0023856
6	19 6 30 ^{h m s} .25	22 20 46 ^{o ' "} .9	.0421255	0 48.1	286 25 9 ^{o ' "} .2	0 15 14 ^{o ' "} .0	.0023819
7	19 7 0 ^{h m s} .43	22 20 3 ^{o ' "} .3	.0422434	0 44.6	286 26 57 ^{o ' "} .8	0 15 9 ^{o ' "} .3	.0023781
8	19 7 30 ^{h m s} .57	22 19 19 ^{o ' "} .1	.0423511	0 41.2	286 28 46 ^{o ' "} .5	0 15 4 ^{o ' "} .6	.0023744
9	19 8 0 ^{h m s} .96	22 18 34 ^{o ' "} .5	.0424485	0 37.7	286 30 35 ^{o ' "} .1	0 14 59 ^{o ' "} .9	.0023706
0	19 8 31 ^{h m s} .29	22 17 49 ^{o ' "} .5	.0425357	0 34.3	286 32 23 ^{o ' "} .7	0 14 55 ^{o ' "} .2	.0023669
1	19 9 1 ^{h m s} .65	22 17 4 ^{o ' "} .0	.0426125	0 30.9	286 34 12 ^{o ' "} .3	0 14 50 ^{o ' "} .5	.0023631
2	19 9 32 ^{h m s} .05	S. 22 16 18 ^{o ' "} .1	1.0426790	0 27.5	286 36 0 ^{o ' "} .9	N. 0 14 45 ^{o ' "} .8	1.0023593

DECEMBER, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	h m s 18 54 29·51	+ 1·13	0·54	S. 22 36 9·6	+ 1·3	7·0	0·
2	18 54 56·74	1·14	0·54	22 35 39·1	1·3	7·0	0·
3	18 55 24·15	1·15	0·54	22 35 8·0	1·3	7·0	0·
4	18 55 51·73	1·15	0·54	22 34 36·3	1·3	6·9	0·
5	18 56 19·48	1·16	0·54	22 34 4·1	1·4	6·9	0·
6	18 56 47·39	1·17	0·54	22 33 31·4	1·4	6·9	0·
7	18 57 15·45	1·17	0·54	22 32 58·1	1·4	6·9	0·
8	18 57 43·66	1·18	0·54	22 32 24·2	1·4	6·9	0·
9	18 58 12·02	1·18	0·54	22 31 49·8	1·4	6·9	0·
10	18 58 40·51	1·19	0·54	22 31 14·9	1·5	6·9	0·
11	18 59 9·14	1·20	0·54	22 30 39·4	1·5	6·9	0·
12	18 59 37·90	1·20	0·53	22 30 3·4	1·5	6·9	0·
13	19 0 6·77	1·21	0·53	22 29 26·9	1·5	6·9	0·
14	19 0 35·76	1·21	0·53	22 28 49·9	1·6	6·9	0·
15	19 1 4·87	1·21	0·53	22 28 12·3	1·6	6·9	0·
16	19 1 34·09	1·22	0·53	22 27 34·2	1·6	6·9	0·
17	19 2 3·41	1·22	0·53	22 26 55·6	1·6	6·9	0·
18	19 2 32·83	1·23	0·53	22 26 16·5	1·6	6·9	0·
19	19 3 2·34	1·23	0·53	22 25 36·9	1·7	6·9	0·
20	19 3 31·95	1·24	0·53	22 24 56·7	1·7	6·9	0·
21	19 4 1·65	1·24	0·53	22 24 16·1	1·7	6·9	0·
22	19 4 31·42	1·24	0·53	22 23 34·9	1·7	6·9	0·
23	19 5 1·28	1·25	0·53	22 22 53·3	1·7	6·9	0·
24	19 5 31·21	1·25	0·53	22 22 11·1	1·8	6·9	0·
25	19 6 1·20	1·25	0·53	22 21 28·5	1·8	6·9	0·
26	19 6 31·26	1·25	0·53	22 20 45·4	1·8	6·9	0·
27	19 7 1·37	1·26	0·53	22 20 1·8	1·8	6·9	0·
28	19 7 31·54	1·26	0·53	22 19 17·8	1·8	6·9	0·
29	19 8 1·75	1·26	0·53	22 18 33·3	1·9	6·9	0·
30	19 8 32·01	1·26	0·53	22 17 48·4	1·9	6·9	0·
31	19 9 2·30	1·26	0·53	22 17 3·0	1·9	6·9	0·
32	19 9 32·62	+ 1·26	0·52	S. 22 16 17·2	+ 1·9	6·8	0·

JANUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	^h ^m ^s	^o ['] ["]		^h ^m	^o ['] ["]	^o ['] ["]	
1	23 27 42.90	S. 4 18 15.5	1.3096921	4 44.1	353 31 54.0	S. 0 45 45.7	1.3029855
2	23 27 48.93	4 17 34.4	.3100371	4 40.2	353 32 32.8	0 45 45.6	.3029853
3	23 27 55.12	4 16 52.3	.3103797	4 36.4	353 33 11.5	0 45 45.5	.3029851
4	23 28 1.48	4 16 9.1	.3107197	4 32.6	353 33 50.2	0 45 45.4	.3029848
5	23 28 8.01	4 15 24.8	.3110571	4 28.8	353 34 28.9	0 45 45.3	.3029846
6	23 28 14.70	4 14 39.5	.3113917	4 24.9	353 35 7.6	0 45 45.2	.3029844
7	23 28 21.56	4 13 53.1	.3117235	4 21.1	353 35 46.3	0 45 45.1	.3029842
8	23 28 28.58	4 13 5.7	.3120523	4 17.3	353 36 25.0	0 45 45.0	.3029839
9	23 28 35.76	4 12 17.3	.3123781	4 13.5	353 37 3.7	0 45 44.9	.3029837
10	23 28 43.09	4 11 28.0	.3127008	4 9.7	353 37 42.4	0 45 44.8	.3029835
11	23 28 50.58	4 10 37.6	.3130203	4 5.9	353 38 21.1	0 45 44.8	.3029833
12	23 28 58.22	4 9 46.3	.3133365	4 2.1	353 38 59.8	0 45 44.7	.3029831
13	23 29 6.02	4 8 54.0	.3136492	3 58.3	353 39 38.5	0 45 44.6	.3029828
14	23 29 13.97	4 8 0.8	.3139586	3 54.5	353 40 17.2	0 45 44.5	.3029826
15	23 29 22.06	4 7 6.6	.3142643	3 50.7	353 40 55.9	0 45 44.4	.3029824
16	23 29 30.30	4 6 11.6	.3145664	3 46.9	353 41 34.6	0 45 44.3	.3029821
17	23 29 38.68	4 5 15.6	.3148648	3 43.1	353 42 13.3	0 45 44.2	.3029819
18	23 29 47.20	4 4 18.7	.3151594	3 39.3	353 42 52.0	0 45 44.1	.3029817
19	23 29 55.86	4 3 21.0	.3154501	3 35.5	353 43 30.6	0 45 44.0	.3029815
20	23 30 4.66	4 2 22.4	.3157369	3 31.7	353 44 9.3	0 45 43.9	.3029812
21	23 30 13.59	4 1 23.0	.3160196	3 27.9	353 44 48.0	0 45 43.8	.3029810
22	23 30 22.66	4 0 22.8	.3162983	3 24.1	353 45 26.7	0 45 43.7	.3029808
23	23 30 31.85	3 59 21.7	.3165728	3 20.4	353 46 5.4	0 45 43.6	.3029805
24	23 30 41.17	3 58 19.9	.3168432	3 16.6	353 46 44.1	0 45 43.6	.3029803
25	23 30 50.62	3 57 17.2	.3171093	3 12.8	353 47 22.8	0 45 43.5	.3029801
26	23 31 0.19	3 56 13.8	.3173710	3 9.0	353 48 1.4	0 45 43.4	.3029798
27	23 31 9.88	3 55 9.7	.3176284	3 5.3	353 48 40.1	0 45 43.3	.3029796
28	23 31 19.69	3 54 4.7	.3178814	3 1.5	353 49 18.8	0 45 43.2	.3029794
29	23 31 29.62	3 52 59.1	.3181299	2 57.7	353 49 57.5	0 45 43.1	.3029791
30	23 31 39.66	3 51 52.7	.3183739	2 53.9	353 50 36.1	0 45 43.0	.3029789
31	23 31 49.82	3 50 45.6	.3186134	2 50.2	353 51 14.8	0 45 42.9	.3029787
32	23 32 0.08	S. 3 49 37.9	1.3188482	2 46.4	353 51 53.5	S. 0 45 42.8	1.3029784

JANUARY, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.			Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.			Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
	h	m	s	"	"	o	'	"	"	"	"
1	23	27	44.08	+ 0.25	0.12	S. 4	18	7.5	+ 1.7	1.8	0.4
2	23	27	50.13	0.26	0.12	4	17	26.3	1.7	1.8	0.4
3	23	27	56.34	0.26	0.12	4	16	44.1	1.8	1.8	0.4
4	23	28	2.71	0.27	0.12	4	16	0.8	1.8	1.8	0.4
5	23	28	9.25	0.28	0.12	4	15	16.4	1.9	1.8	0.4
6	23	28	15.95	0.28	0.12	4	14	34.0	1.9	1.8	0.4
7	23	28	22.82	0.29	0.12	4	13	44.5	2.0	1.8	0.4
8	23	28	29.83	0.30	0.12	4	12	57.1	2.0	1.8	0.4
9	23	28	37.04	0.30	0.12	4	12	8.7	2.0	1.8	0.4
10	23	28	44.38	0.31	0.12	4	11	19.3	2.1	1.8	0.4
11	23	28	51.87	0.32	0.12	4	10	28.9	2.1	1.8	0.4
12	23	28	59.51	0.32	0.12	4	9	37.6	2.2	1.8	0.4
13	23	29	7.32	0.33	0.12	4	8	45.3	2.2	1.8	0.4
14	23	29	15.27	0.33	0.12	4	7	52.1	2.2	1.8	0.4
15	23	29	23.36	0.34	0.12	4	6	57.9	2.3	1.8	0.4
16	23	29	31.61	0.35	0.12	4	6	2.9	2.3	1.8	0.4
17	23	29	39.99	0.35	0.12	4	5	6.9	2.4	1.8	0.4
18	23	29	48.51	0.36	0.12	4	4	10.0	2.4	1.8	0.4
19	23	29	57.16	0.36	0.12	4	3	12.3	2.4	1.8	0.4
20	23	30	5.96	0.37	0.12	4	2	13.7	2.5	1.8	0.4
21	23	30	14.89	0.37	0.12	4	1	14.3	2.5	1.8	0.4
22	23	30	23.95	0.38	0.12	4	0	14.1	2.5	1.8	0.4
23	23	30	33.14	0.39	0.12	3	59	13.1	2.6	1.8	0.4
24	23	30	42.45	0.39	0.12	3	58	11.3	2.6	1.8	0.4
25	23	30	51.89	0.40	0.12	3	57	8.7	2.6	1.8	0.4
26	23	31	1.45	0.40	0.12	3	56	5.4	2.7	1.8	0.4
27	23	31	11.13	0.41	0.12	3	55	1.3	2.7	1.8	0.4
28	23	31	20.93	0.41	0.12	3	53	56.4	2.7	1.8	0.4
29	23	31	30.85	0.42	0.12	3	52	50.9	2.7	1.8	0.4
30	23	31	40.88	0.42	0.12	3	51	44.6	2.8	1.8	0.4
31	23	31	51.03	0.42	0.12	3	50	37.6	2.8	1.8	0.4
32	23	32	1.27	+ 0.43	0.12	S. 3	49	30.0	+ 2.8	1.8	0.4

FEBRUARY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	23 32 0 ^h 08 ^m	S. 3 49 37 ^o 9 [']	1 [.] 3188482	2 46 ^h 4 ^m	353 51 53 ^o 5 [']	S. 0 45 42 ^o 8 [']	1 [.] 3029784
2	23 32 10 ^h 45 ^m	3 48 29 ^o 4 [']	3190783	2 42 ^h 7 ^m	353 52 32 ^o 2 [']	0 45 42 ^o 7 [']	3029782
3	23 32 20 ^h 93 ^m	3 47 20 ^o 3 [']	3193037	2 38 ^h 9 ^m	353 53 10 ^o 8 [']	0 45 42 ^o 6 [']	3029779
4	23 32 31 ^h 51 ^m	3 46 10 ^o 6 [']	3195243	2 35 ^h 2 ^m	353 53 49 ^o 5 [']	0 45 42 ^o 5 [']	3029777
5	23 32 42 ^h 19 ^m	3 45 0 ^o 3 [']	3197400	2 31 ^h 4 ^m	353 54 28 ^o 2 [']	0 45 42 ^o 4 [']	3029775
6	23 32 52 ^h 98 ^m	3 43 49 ^o 3 [']	3199507	2 27 ^h 7 ^m	353 55 6 ^o 8 [']	0 45 42 ^o 3 [']	3029772
7	23 33 3 ^h 85 ^m	3 42 37 ^o 8 [']	3201565	2 23 ^h 9 ^m	353 55 45 ^o 5 [']	0 45 42 ^o 2 [']	3029770
8	23 33 14 ^h 83 ^m	3 41 25 ^o 6 [']	3203573	2 20 ^h 2 ^m	353 56 24 ^o 1 [']	0 45 42 ^o 1 [']	3029767
9	23 33 25 ^h 89 ^m	3 40 12 ^o 9 [']	3205530	2 16 ^h 4 ^m	353 57 2 ^o 8 [']	0 45 42 ^o 0 [']	3029765
10	23 33 37 ^h 04 ^m	3 39 59 ^o 7 [']	3207435	2 12 ^h 7 ^m	353 57 41 ^o 4 [']	0 45 41 ^o 9 [']	3029763
11	23 33 48 ^h 28 ^m	3 37 45 ^o 9 [']	3209289	2 8 ^h 9 ^m	353 58 20 ^o 1 [']	0 45 41 ^o 8 [']	3029760
12	23 33 59 ^h 60 ^m	3 36 31 ^o 6 [']	3211090	2 5 ^h 2 ^m	353 58 58 ^o 7 [']	0 45 41 ^o 7 [']	3029758
13	23 34 11 ^h 01 ^m	3 35 16 ^o 8 [']	3212839	2 1 ^h 4 ^m	353 59 37 ^o 4 [']	0 45 41 ^o 6 [']	3029755
14	23 34 22 ^h 49 ^m	3 34 1 ^o 5 [']	3214534	1 57 ^h 7 ^m	354 0 16 ^o 0 [']	0 45 41 ^o 5 [']	3029753
15	23 34 34 ^h 05 ^m	3 32 45 ^o 8 [']	3216177	1 53 ^h 9 ^m	354 0 54 ^o 6 [']	0 45 41 ^o 4 [']	3029750
16	23 34 45 ^h 68 ^m	3 31 29 ^o 6 [']	3217765	1 50 ^h 2 ^m	354 1 33 ^o 3 [']	0 45 41 ^o 3 [']	3029748
17	23 34 57 ^h 38 ^m	3 30 13 ^o 0 [']	3219300	1 46 ^h 4 ^m	354 2 11 ^o 9 [']	0 45 41 ^o 2 [']	3029745
18	23 35 9 ^h 15 ^m	3 28 56 ^o 0 [']	3220780	1 42 ^h 7 ^m	354 2 50 ^o 6 [']	0 45 41 ^o 1 [']	3029743
19	23 35 20 ^h 98 ^m	3 27 38 ^o 6 [']	3222206	1 39 ^h 0 ^m	354 3 29 ^o 2 [']	0 45 41 ^o 0 [']	3029740
20	23 35 32 ^h 87 ^m	3 26 20 ^o 9 [']	3223577	1 35 ^h 3 ^m	354 4 7 ^o 9 [']	0 45 40 ^o 9 [']	3029738
21	23 35 44 ^h 82 ^m	3 25 2 ^o 8 [']	3224893	1 31 ^h 5 ^m	354 4 46 ^o 5 [']	0 45 40 ^o 8 [']	3029735
22	23 35 56 ^h 83 ^m	3 23 44 ^o 3 [']	3226154	1 27 ^h 8 ^m	354 5 25 ^o 1 [']	0 45 40 ^o 7 [']	3029733
23	23 36 8 ^h 89 ^m	3 22 25 ^o 5 [']	3227361	1 24 ^h 0 ^m	354 6 3 ^o 8 [']	0 45 40 ^o 6 [']	3029730
24	23 36 21 ^h 01 ^m	3 21 6 ^o 4 [']	3228512	1 20 ^h 3 ^m	354 6 42 ^o 4 [']	0 45 40 ^o 5 [']	3029728
25	23 36 33 ^h 18 ^m	3 19 47 ^o 0 [']	3229608	1 16 ^h 6 ^m	354 7 21 ^o 1 [']	0 45 40 ^o 4 [']	3029725
26	23 36 45 ^h 39 ^m	3 18 27 ^o 3 [']	3230649	1 12 ^h 9 ^m	354 7 59 ^o 7 [']	0 45 40 ^o 3 [']	3029723
27	23 36 57 ^h 64 ^m	3 17 7 ^o 4 [']	3231633	1 9 ^h 1 ^m	354 8 38 ^o 3 [']	0 45 40 ^o 2 [']	3029720
28	23 37 9 ^h 94 ^m	3 15 47 ^o 2 [']	3232562	1 5 ^h 4 ^m	354 9 17 ^o 0 [']	0 45 40 ^o 1 [']	3029718
29	23 37 22 ^h 28 ^m	S. 3 14 26 ^o 8 [']	1 [.] 3233434	1 1 ^h 7 ^m	354 9 55 ^o 6 [']	S. 0 45 40 ^o 0 [']	1 [.] 3029715

FEBRUARY, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.			Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.			Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.		
	h	m	s	"	"	°	'	"	"	"	"		
1	23	32	1	27	+ 0'43	0'12	S. 3	49	30	0	+ 2'8	1'8	0'4
2	23	32	11	62	0'43	0'12	3	48	21	6	2'9	1'8	0'4
3	23	32	22	09	0'44	0'12	3	47	12	6	2'9	1'8	0'4
4	23	32	32	65	0'44	0'12	3	46	3	0	2'9	1'8	0'4
5	23	32	43	31	0'45	0'12	3	44	52	8	2'9	1'8	0'4
6	23	32	54	08	0'45	0'12	3	43	41	9	3'0	1'8	0'4
7	23	33	4	94	0'45	0'12	3	42	30	6	3'0	1'8	0'4
8	23	33	15	90	0'46	0'12	3	41	18	5	3'0	1'8	0'4
9	23	33	26	95	0'46	0'12	3	40	5	9	3'0	1'8	0'4
10	23	33	38	08	0'47	0'12	3	38	52	9	3'1	1'8	0'4
11	23	33	49	30	0'47	0'12	3	37	39	2	3'1	1'8	0'4
12	23	34	0	60	0'47	0'12	3	36	25	0	3'1	1'8	0'4
13	23	34	11	98	0'48	0'12	3	35	10	4	3'1	1'8	0'4
14	23	34	23	44	0'48	0'12	3	33	55	2	3'1	1'8	0'4
15	23	34	34	97	0'48	0'12	3	32	39	7	3'1	1'8	0'4
16	23	34	46	58	0'49	0'12	3	31	23	7	3'2	1'8	0'4
17	23	34	58	25	0'49	0'12	3	30	7	2	3'2	1'8	0'4
18	23	35	10	00	0'49	0'12	3	28	50	4	3'2	1'8	0'4
19	23	35	21	80	0'49	0'12	3	27	33	2	3'2	1'8	0'4
20	23	35	33	66	0'50	0'12	3	26	15	7	3'2	1'8	0'4
21	23	35	45	59	0'50	0'12	3	24	57	8	3'2	1'8	0'4
22	23	35	57	57	0'50	0'12	3	23	39	5	3'3	1'8	0'4
23	23	36	9	60	0'50	0'12	3	22	20	8	3'3	1'8	0'4
24	23	36	21	69	0'50	0'12	3	21	1	9	3'3	1'8	0'4
25	23	36	33	83	0'51	0'12	3	19	42	7	3'3	1'8	0'4
26	23	36	46	01	0'51	0'12	3	18	23	2	3'3	1'8	0'4
27	23	36	58	23	0'51	0'12	3	17	3	5	3'3	1'8	0'4
28	23	37	10	50	0'51	0'12	3	15	43	5	3'3	1'8	0'4
29	23	37	23	81	+ 0'51	0'12	S. 3	14	23	3	+	1'8	0'4

MARCH, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridia. Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	23 37 22.28	S. 3 14 26.8	1.3233434	1 1.7	354 9 55.6	S. 0 45 40.0	1.302971
2	23 37 34.65	3 13 6.2	.3234250	0 58.0	354 10 34.3	0 45 39.9	.302971
3	23 37 47.06	3 11 45.4	.3235010	0 54.2	354 11 12.9	0 45 39.8	.302971
4	23 37 59.50	3 10 24.4	.3235712	0 50.5	354 11 51.3	0 45 39.7	.302970
5	23 38 11.96	3 9 3.2	.3236358	0 46.8	354 12 30.2	0 45 39.6	.302970
6	23 38 24.46	3 7 41.9	.3236946	0 43.1	354 13 8.8	0 45 39.5	.302970
7	23 38 36.98	3 6 20.5	.3237477	0 39.3	354 13 47.4	0 45 39.4	.302969
8	23 38 49.52	3 4 58.9	.3237950	0 35.6	354 14 26.1	0 45 39.3	.302969
9	23 39 2.08	3 3 37.3	.3238366	0 31.9	354 15 4.7	0 45 39.2	.302969
10	23 39 14.66	3 2 15.6	.3238725	0 28.2	354 15 43.4	0 45 39.1	.302969
11	23 39 27.25	3 0 53.8	.3239025	0 24.4	354 16 22.0	0 45 39.0	.302968
12	23 39 39.85	2 59 32.0	.3239268	0 20.7	354 17 0.7	0 45 38.9	.302968
13	23 39 52.46	2 58 10.2	.3239453	0 17.0	354 17 39.3	0 45 38.8	.302968
14	23 40 5.07	2 56 48.3	.3239581	0 13.3	354 18 17.9	0 45 38.7	.302968
15	23 40 17.69	2 55 26.5	.3239651	0 9.5	354 18 56.6	0 45 38.6	.302967
16	23 40 30.30	2 54 4.7	.3239664	0 5.8	354 19 35.2	0 45 38.5	.302967
17	23 40 42.91	2 52 43.0	.3239619	{ 2 31 }	354 20 13.9	0 45 38.4	.302967
18	23 40 55.52	2 51 21.3	.3239516	23 54.7	354 20 52.5	0 45 38.3	.302966
19	23 41 8.12	2 49 59.7	.3239357	23 50.9	354 21 31.2	0 45 38.2	.302966
20	23 41 20.71	2 48 38.2	.3239141	23 47.2	354 22 9.8	0 45 38.1	.302966
21	23 41 33.28	2 47 16.9	.3238868	23 43.5	354 22 48.5	0 45 38.0	.302966
22	23 41 45.84	2 45 55.6	.3238538	23 39.8	354 23 27.1	0 45 37.9	.302965
23	23 41 58.37	2 44 34.5	.3238151	23 36.0	354 24 5.8	0 45 37.8	.302965
24	23 42 10.89	2 43 13.6	.3237707	23 32.3	354 24 44.4	0 45 37.7	.302965
25	23 42 23.38	2 41 52.9	.3237208	23 28.6	354 25 23.1	0 45 37.6	.302965
26	23 42 35.85	2 40 32.3	.3236652	23 24.9	354 26 1.7	0 45 37.5	.302964
27	23 42 48.29	2 39 12.0	.3236041	23 21.1	354 26 40.4	0 45 37.4	.302964
28	23 43 0.70	2 37 51.9	.3235374	23 17.4	354 27 19.0	0 45 37.3	.302964
29	23 43 13.07	2 36 32.0	.3234651	23 13.7	354 27 57.7	0 45 37.2	.302963
30	23 43 25.41	2 35 12.4	.3233873	23 10.0	354 28 36.3	0 45 37.1	.302963
31	23 43 37.71	2 33 53.1	.3233040	23 6.2	354 29 15.0	0 45 37.0	.302963
32	23 43 49.98	S. 2 32 34.0	1.3232151	23 2.5	354 29 53.6	S. 0 45 36.9	1.3029630

MARCH, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 23 ^m 37 ^s 22·81	+ 0·51	0·12	S. 3 14 23·3	+ 3·3	1·8	0·4
2	23 37 35·15	0·52	0·12	3 13 2·9	3·4	1·8	0·4
3	23 37 47·53	0·52	0·12	3 11 42·3	3·4	1·8	0·4
4	23 37 59·93	0·52	0·12	3 10 21·5	3·4	1·8	0·4
5	23 38 12·36	0·52	0·12	3 9 0·5	3·4	1·8	0·4
6	23 38 24·83	0·52	0·12	3 7 39·5	3·4	1·8	0·4
7	23 38 37·32	0·52	0·12	3 6 18·3	3·4	1·8	0·4
8	23 38 49·83	0·52	0·12	3 4 56·9	3·4	1·8	0·4
9	23 39 2·36	0·52	0·12	3 3 35·5	3·4	1·8	0·4
10	23 39 14·91	0·52	0·12	3 2 14·0	3·4	1·8	0·4
11	23 39 27·46	0·52	0·12	3 0 52·4	3·4	1·8	0·4
12	23 39 40·03	0·52	0·12	2 59 30·8	3·4	1·8	0·4
13	23 39 52·61	0·52	0·12	2 58 9·2	3·4	1·8	0·4
14	23 40 5·19	0·52	0·12	2 56 47·5	3·4	1·8	0·4
15	23 40 17·78	0·52	0·12	2 55 25·9	3·4	1·8	0·4
16	23 40 30·36	0·52	0·12	2 54 4·3	3·4	1·8	0·4
17	{ ²³ 40 ⁴² 38·81}	{0·52}	{0·12}	{2 52 42·3}	{3·4}	{1·8}	{0·4}
18	23 41 8·07	0·52	0·12	2 50 0·0	3·4	1·8	0·4
19	23 41 20·62	0·52	0·12	2 48 38·7	3·4	1·8	0·4
20	23 41 33·17	0·52	0·12	2 47 17·6	3·4	1·8	0·4
21	23 41 45·69	0·52	0·12	2 45 56·7	3·4	1·8	0·4
22	23 41 58·20	0·52	0·12	2 44 35·8	3·4	1·8	0·4
23	23 42 10·68	0·52	0·12	2 43 15·0	3·4	1·8	0·4
24	23 42 23·14	0·52	0·12	2 41 54·5	3·4	1·8	0·4
25	23 42 35·57	0·52	0·12	2 40 34·2	3·3	1·8	
26	23 42 47·98	0·52	0·12	2 39 14·1	3·3	1·8	
27	23 43 0·36	0·52	0·12	2 37 54·2	3·3	1·8	
28	23 43 12·70	0·51	0·12	2 36 34·3	3·3	1·8	
29	23 43 25·01	0·51	0·12	2 35 15·0	3·3	1·8	
30	23 43 37·28	0·51	0·12	2 33 55·9	3·3	1·8	
31	23 43 49·51	0·51	0·12	2 32 37·1	3·3	1·8	
32	23 44 1·71	+ 0·51	0·12	S. 2 31 18·5	+ 3·3	1·8	

APRIL, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	h m s 23 43 49.98	S. 2 32 34.0	1.3232151	h m 23 2.5	354 29 53.6	S. 0 45 36.9	1.30296
2	23 44 2.20	2 31 15.3	.3231208	22 58.7	354 30 32.8	0 45 36.8	.30296
3	23 44 14.37	2 29 56.8	.3230210	22 55.0	354 31 10.9	0 45 36.7	.30296
4	23 44 26.50	2 28 38.8	.3229158	22 51.3	354 31 49.6	0 45 36.6	.30296
5	23 44 38.58	2 27 21.0	.3228051	22 47.6	354 32 28.2	0 45 36.5	.30296
6	23 44 50.61	2 26 3.6	.3226890	22 43.8	354 33 6.8	0 45 36.4	.30296
7	23 45 2.58	2 24 46.6	.3225674	22 40.1	354 33 45.5	0 45 36.3	.30296
8	23 45 14.50	2 23 30.0	.3224406	22 36.4	354 34 24.1	0 45 36.2	.30296
9	23 45 26.35	2 22 13.8	.3223083	22 32.7	354 35 2.8	0 45 36.1	.30296
10	23 45 38.14	2 20 58.0	.3221708	22 28.9	354 35 41.4	0 45 36.0	.30296
11	23 45 49.87	2 19 42.7	.3220280	22 25.2	354 36 20.1	0 45 35.9	.30296
12	23 46 1.53	2 18 27.9	.3218800	22 21.4	354 36 58.7	0 45 35.8	.30295
13	23 46 13.12	2 17 13.6	.3217269	22 17.7	354 37 37.4	0 45 35.7	.30295
14	23 46 24.63	2 15 59.8	.3215687	22 14.0	354 38 16.0	0 45 35.6	.30295
15	23 46 36.07	2 14 46.5	.3214053	22 10.2	354 38 54.7	0 45 35.5	.30295
16	23 46 47.44	2 13 33.7	.3212369	22 6.5	354 39 33.4	0 45 35.4	.30295
17	23 46 58.72	2 12 21.5	.3210635	22 2.7	354 40 12.0	0 45 35.3	.30295
18	23 47 9.92	2 11 9.8	.3208852	21 59.0	354 40 50.7	0 45 35.2	.30295
19	23 47 21.04	2 9 58.7	.3207020	21 55.2	354 41 29.3	0 45 35.1	.30295
20	23 47 32.08	2 8 48.1	.3205139	21 51.5	354 42 8.0	0 45 35.0	.30295
21	23 47 43.02	2 7 38.2	.3203211	21 47.7	354 42 46.6	0 45 34.9	.30295
22	23 47 53.88	2 6 28.8	.3201234	21 44.0	354 43 25.3	0 45 34.7	.30295
23	23 48 4.64	2 5 20.1	.3199211	21 40.2	354 44 4.0	0 45 34.6	.30295
24	23 48 15.31	2 4 12.0	.3197141	21 36.5	354 44 42.6	0 45 34.5	.30295
25	23 48 25.88	2 3 4.6	.3195025	21 32.7	354 45 21.3	0 45 34.4	.30295
26	23 48 36.36	2 1 57.9	.3192864	21 29.0	354 46 0.0	0 45 34.3	.30295
27	23 48 46.73	2 0 51.8	.3190657	21 25.2	354 46 38.6	0 45 34.2	.30295
28	23 48 57.01	1 59 46.4	.3188406	21 21.4	354 47 17.3	0 45 34.1	.30295
29	23 49 7.18	1 58 41.7	.3186110	21 17.6	354 47 56.0	0 45 34.0	.30295
30	23 49 17.25	1 57 37.7	.3183771	21 13.9	354 48 34.6	0 45 33.9	.30295
31	23 49 27.21	S. 1 56 34.5	1.3181389	21 10.1	354 49 13.3	S. 0 45 33.8	1.30295

APRIL, 1842.

At Transit over the Meridian of Greenwich.

Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
	^h ^m ^s	^s	^s	^o ⁱ ["]	["]	["]	["]
1	23 44 1 71	+ 0 51	0 12	S. 2 31 18 5	+ 3 3	1 8	0 4
2	23 44 13 86	0 51	0 12	2 30 0 3	3 3	1 8	0 4
3	23 44 25 95	0 50	0 12	2 28 42 3	3 2	1 8	0 4
4	23 44 38 01	0 50	0 12	2 27 24 8	3 2	1 8	0 4
5	23 44 50 01	0 50	0 12	2 26 7 5	3 2	1 8	0 4
6	23 45 1 95	0 50	0 12	2 24 50 7	3 2	1 8	0 4
7	23 45 13 84	0 49	0 12	2 23 34 3	3 2	1 8	0 4
8	23 45 25 67	0 49	0 12	2 22 18 3	3 2	1 8	0 4
9	23 45 37 43	0 49	0 12	2 21 2 7	3 1	1 8	0 4
10	23 45 49 12	0 49	0 12	2 19 47 5	3 1	1 8	0 4
11	23 46 0 76	0 48	0 12	2 18 32 8	3 1	1 8	0 4
12	23 46 12 32	0 48	0 12	2 17 18 6	3 1	1 8	0 4
13	23 46 23 82	0 48	0 12	2 16 5 0	3 1	1 8	0 4
14	23 46 35 23	0 47	0 12	2 14 51 9	3 0	1 8	0 4
15	23 46 46 57	0 47	0 12	2 13 39 2	3 0	1 8	0 4
16	23 46 57 83	0 47	0 12	2 12 27 1	3 0	1 8	0 4
17	23 47 9 01	0 46	0 12	2 11 15 6	3 0	1 8	0 4
18	23 47 20 10	0 46	0 12	2 10 4 6	2 9	1 8	0 4
19	23 47 31 11	0 46	0 12	2 8 54 2	2 9	1 8	0 4
20	23 47 42 04	0 45	0 12	2 7 44 4	2 9	1 8	0 4
21	23 47 52 87	0 45	0 12	2 6 35 2	2 9	1 8	0 4
22	23 48 3 62	0 45	0 12	2 5 26 5	2 8	1 8	0 4
23	23 48 14 27	0 44	0 12	2 4 18 6	2 8	1 8	0 4
24	23 48 24 83	0 44	0 12	2 3 11 2	2 8	1 8	0 4
25	23 48 35 29	0 43	0 12	2 2 4 6	2 8	1 8	0 4
26	23 48 45 65	0 43	0 12	2 0 58 7	2 7	1 8	0 4
27	23 48 55 91	0 43	0 12	1 59 53 4	2 7	1 8	0 4
28	23 49 6 07	0 42	0 12	1 58 48 8	2 7	1 8	0 4
29	23 49 16 12	0 42	0 12	1 57 44 9	2 7	1 8	0 4
30	23 49 26 07	0 41	0 12	1 56 41 7	2 7	1 8	0 4
31	23 49 35 90	+ 0 41	0 12	S. 1 55 39 2	+ 2 7	1 8	0 4

MAY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	^h ^m ^s	^o ['] ["]		^h ^m	^o ['] ["]	^o ['] ["]	
1	23 49 27.21	S. 1 56 34.5	1.3181389	21 10.1	354 49 13.3	S. 0 45 33.8	1.302954
2	23 49 37.06	1 55 32.0	1.3178964	21 6.4	354 49 52.0	0 45 33.7	1.302953
3	23 49 46.80	1 54 30.2	1.3176497	21 2.6	354 50 30.7	0 45 33.6	1.302953
4	23 49 56.42	1 53 29.2	1.3173988	20 58.8	354 51 9.3	0 45 33.5	1.302953
5	23 50 5.93	1 52 29.0	1.3171438	20 55.0	354 51 48.0	0 45 33.4	1.302952
6	23 50 15.32	1 51 29.6	1.3168846	20 51.3	354 52 26.7	0 45 33.3	1.302952
7	23 50 24.59	1 50 31.0	1.3166214	20 47.5	354 53 5.4	0 45 33.2	1.302952
8	23 50 33.74	1 49 33.2	1.3163543	20 43.7	354 53 44.1	0 45 33.1	1.302952
9	23 50 42.76	1 48 36.2	1.3160832	20 39.9	354 54 22.8	0 45 33.0	1.302951
10	23 50 51.65	1 47 40.1	1.3158084	20 36.1	354 55 1.5	0 45 32.9	1.302951
11	23 51 0.42	1 46 44.9	1.3155297	20 32.3	354 55 40.2	0 45 32.8	1.302951
12	23 51 9.05	1 45 50.5	1.3152475	20 28.5	354 56 18.8	0 45 32.7	1.302950
13	23 51 17.56	1 44 57.0	1.3149618	20 24.7	354 56 57.5	0 45 32.6	1.302950
14	23 51 25.92	1 44 4.5	1.3146726	20 20.9	354 57 36.2	0 45 32.5	1.302950
15	23 51 34.16	1 43 18.8	1.3143799	20 17.1	354 58 14.9	0 45 32.4	1.302949
16	23 51 42.25	1 42 22.0	1.3140839	20 13.3	354 58 53.6	0 45 32.3	1.302949
17	23 51 50.21	1 41 32.1	1.3137847	20 9.5	354 59 32.3	0 45 32.2	1.302949
18	23 51 58.03	1 40 43.2	1.3134822	20 5.7	355 0 11.0	0 45 32.1	1.302948
19	23 52 5.71	1 39 55.1	1.3131766	20 1.9	355 0 49.8	0 45 32.0	1.302948
20	23 52 13.24	1 39 8.1	1.3128680	19 58.1	355 1 28.5	0 45 31.9	1.302948
21	23 52 20.63	1 38 22.0	1.3125564	19 54.3	355 2 7.2	0 45 31.8	1.302947
22	23 52 27.87	1 37 36.9	1.3122419	19 50.5	355 2 45.9	0 45 31.6	1.302947
23	23 52 34.97	1 36 52.7	1.3119245	19 46.7	355 3 24.6	0 45 31.5	1.302947
24	23 52 41.92	1 36 9.5	1.3116044	19 42.9	355 4 3.3	0 45 31.4	1.302946
25	23 52 48.72	1 35 27.4	1.3112816	19 39.0	355 4 42.0	0 45 31.3	1.302946
26	23 52 55.37	1 34 46.2	1.3109563	19 35.2	355 5 20.7	0 45 31.2	1.302946
27	23 53 1.86	1 34 6.1	1.3106284	19 31.4	355 5 59.4	0 45 31.1	1.302945
28	23 53 8.20	1 33 26.9	1.3102980	19 27.6	355 6 38.2	0 45 31.0	1.302945
29	23 53 14.39	1 32 48.8	1.3099653	19 23.7	355 7 16.9	0 45 30.9	1.302945
30	23 53 20.42	1 32 11.7	1.3096303	19 19.9	355 7 55.6	0 45 30.8	1.302944
31	23 53 26.30	1 31 35.7	1.3092930	19 16.1	355 8 34.3	0 45 30.7	1.302944
32	23 53 32.01	S. 1 31 0.7	1.3089536	19 12.3	355 9 13.0	S. 0 45 30.6	1.302944

MAY, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^{h m s} 23 49 35.90	^s + 0.41	^s 0.12	^{o i n} S. 1 55 39.3	ⁿ + 2.6	ⁿ 1.8	ⁿ 0.4
2	23 49 45.63	0.40	0.12	1 54 37.7	2.6	1.8	0.4
3	23 49 55.24	0.40	0.12	1 53 36.7	2.5	1.8	0.4
4	23 50 4.74	0.39	0.12	1 52 36.5	2.5	1.8	0.4
5	23 50 14.12	0.39	0.12	1 51 37.2	2.5	1.8	0.4
6	23 50 23.38	0.38	0.12	1 50 38.6	2.4	1.8	0.4
7	23 50 32.52	0.38	0.12	1 49 40.8	2.4	1.8	0.4
8	23 50 41.54	0.37	0.12	1 48 43.9	2.4	1.8	0.4
9	23 50 50.43	0.37	0.12	1 47 47.7	2.3	1.8	0.4
10	23 50 59.19	0.36	0.12	1 46 52.5	2.3	1.8	0.4
11	23 51 7.82	0.36	0.12	1 45 58.2	2.2	1.8	0.4
12	23 51 16.31	0.35	0.12	1 45 4.7	2.2	1.8	0.4
13	23 51 24.68	0.35	0.12	1 44 12.1	2.2	1.8	0.4
14	23 51 32.91	0.34	0.12	1 43 20.5	2.1	1.8	0.4
15	23 51 41.01	0.33	0.12	1 42 29.7	2.1	1.8	0.4
16	23 51 48.97	0.33	0.12	1 41 39.8	2.1	1.8	0.4
17	23 51 56.79	0.32	0.12	1 40 50.9	2.0	1.8	0.4
18	23 52 4.47	0.32	0.12	1 40 2.9	2.0	1.8	0.4
19	23 52 12.01	0.31	0.12	1 39 15.7	1.9	1.8	0.4
20	23 52 19.40	0.31	0.12	1 38 29.6	1.9	1.8	0.4
21	23 52 26.65	0.30	0.12	1 37 44.4	1.9	1.8	0.4
22	23 52 33.75	0.29	0.12	1 37 0.2	1.8	1.8	0.4
23	23 52 40.71	0.29	0.12	1 36 17.0	1.8	1.8	0.4
24	23 52 47.52	0.28	0.12	1 35 34.7	1.7	1.8	0.4
25	23 52 54.17	0.27	0.12	1 34 52.5	1.7	1.8	0.4
26	23 53 0.68	0.27	0.12	1 34 13.3	1.7	1.8	0.4
27	23 53 7.03	0.26	0.12	1 33 34.1	1.6	1.8	0.4
28	23 53 13.22	0.26	0.12	1 32 55.8	1.6	1.8	0.4
29	23 53 19.27	0.25	0.12	1 32 18.7	1.5	1.8	0.4
30	23 53 25.16	0.24	0.12	1 31 42.5	1.5	1.8	0.4
31	23 53 30.90	0.24	0.12	1 31 7.4	1.4	1.8	0.4
32	23 53 36.47	+ 0.23	0.12	S. 1 30 33.4	+ 1.4	1.8	0.4

JUNE, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	23 53 32.01	S. 1 31 0.7	1.3089536	19 12.3	355 9 13.0	S. 0 45 30.6	1.308944
2	23 53 37.57	1 30 26.7	.3086121	19 8.4	355 9 51.8	0 45 30.5	.308943
3	23 53 42.96	1 29 53.8	.3082687	19 4.6	355 10 20.5	0 45 30.4	.308943
4	23 53 48.19	1 29 22.0	.3079253	19 0.7	355 11 9.2	0 45 30.3	.308943
5	23 53 53.26	1 28 51.3	.3075761	18 56.9	355 11 47.9	0 45 30.2	.308942
6	23 53 58.15	1 28 21.6	.3072273	18 53.0	355 12 26.7	0 45 30.1	.308942
7	23 54 2.89	1 27 53.1	.3068768	18 49.2	355 13 5.4	0 45 30.0	.308942
8	23 54 7.45	1 27 25.6	.3065248	18 45.3	355 13 44.1	0 45 29.9	.308941
9	23 54 11.85	1 26 59.3	.3061714	18 41.4	355 14 22.8	0 45 29.8	.308941
0	23 54 16.07	1 26 34.1	.3058166	18 37.5	355 15 1.6	0 45 29.6	.308941
1	23 54 20.12	1 26 10.1	.3054607	18 33.7	355 15 40.3	0 45 29.5	.308940
2	23 54 24.00	1 25 47.1	.3051037	18 29.8	355 16 19.0	0 45 29.4	.308940
3	23 54 27.71	1 25 25.4	.3047457	18 25.9	355 16 57.8	0 45 29.3	.308940
4	23 54 31.25	1 25 4.7	.3043867	18 22.0	355 17 36.5	0 45 29.2	.308939
5	23 54 34.61	1 24 45.2	.3040270	18 18.2	355 18 15.2	0 45 29.1	.308939
6	23 54 37.80	1 24 26.8	.3036665	18 14.3	355 18 53.9	0 45 29.0	.308939
7	23 54 40.82	1 24 9.5	.3033054	18 10.4	355 19 32.7	0 45 28.9	.308938
8	23 54 43.66	1 23 53.4	.3029437	18 6.5	355 20 11.4	0 45 28.8	.308938
9	23 54 46.32	1 23 38.4	.3025816	18 2.6	355 20 50.1	0 45 28.7	.3029386
0	23 54 48.81	1 23 24.5	.3022192	17 58.7	355 21 28.9	0 45 28.6	.3029376
1	23 54 51.13	1 23 11.8	.3018565	17 54.8	355 22 7.6	0 45 28.4	.3029373
2	23 54 53.27	1 23 0.2	.3014937	17 50.9	355 22 46.3	0 45 28.3	.3029369
3	23 54 55.24	1 22 49.8	.3011309	17 47.0	355 23 25.1	0 45 28.2	.3029366
4	23 54 57.03	1 22 40.5	.3007681	17 43.1	355 24 3.8	0 45 28.1	.3029362
5	23 54 58.64	1 22 32.4	.3004055	17 39.2	355 24 42.5	0 45 28.0	.3029359
6	23 55 0.08	1 22 25.5	.3000431	17 35.3	355 25 21.2	0 45 27.9	.3029355
7	23 55 1.34	1 22 19.6	.2996810	17 31.4	355 26 0.0	0 45 27.8	.3029351
8	23 55 2.42	1 22 15.0	.2993194	17 27.5	355 26 38.7	0 45 27.7	.3029348
9	23 55 3.32	1 22 11.5	.2989582	17 23.6	355 27 17.4	0 45 27.6	.3029344
0	23 55 4.05	1 22 9.1	.2985976	17 19.6	355 27 56.2	0 45 27.4	.3029341
1	23 55 4.60	S. 1 22 8.0	1.2982378	17 15.7	355 28 34.9	S. 0 45 27.3	1.3029337

JUNE, 1842.

At Transit over the Meridian of Greenwich.

Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Per.
1	^h 23 ^m 53 ^s 36·47	+ 0·23	0·12	S. 1° 30' 33·4	+ 1·4	1·8	0·4
2	23 53 41·88	0·22	0·12	1 30 0·3	1·4	1·8	0·4
3	23 53 47·13	0·22	0·12	1 29 28·4	1·3	1·8	0·4
4	23 53 52·28	0·21	0·12	1 28 57·6	1·3	1·8	0·4
5	23 53 57·14	0·20	0·12	1 28 27·8	1·2	1·8	0·4
6	23 54 1·89	0·19	0·12	1 27 59·0	1·2	1·8	0·4
7	23 54 6·49	0·19	0·12	1 27 31·5	1·1	1·8	0·4
8	23 54 10·91	0·18	0·12	1 27 5·0	1·1	1·8	0·4
9	23 54 15·16	0·17	0·12	1 26 39·6	1·0	1·8	0·4
10	23 54 19·23	0·17	0·12	1 26 15·4	1·0	1·8	0·4
11	23 54 23·14	0·16	0·12	1 25 52·3	0·9	1·8	0·4
12	23 54 26·88	0·15	0·12	1 25 30·2	0·9	1·8	0·4
13	23 54 30·45	0·15	0·12	1 25 9·5	0·8	1·8	0·4
14	23 54 33·85	0·14	0·12	1 24 49·7	0·8	1·8	0·4
15	23 54 37·07	0·13	0·12	1 24 31·1	0·8	1·8	0·4
16	23 54 40·12	0·12	0·13	1 24 13·6	0·7	1·9	0·4
17	23 54 43·00	0·12	0·13	1 23 57·2	0·7	1·9	0·4
18	23 54 45·70	0·11	0·13	1 23 42·0	0·6	1·9	0·4
19	23 54 48·22	0·10	0·13	1 23 27·9	0·6	1·9	0·4
20	23 54 50·57	0·09	0·13	1 23 14·9	0·5	1·9	0·4
21	23 54 52·76	0·09	0·13	1 23 3·1	0·5	1·9	0·4
22	23 54 54·76	0·08	0·13	1 22 52·4	0·4	1·9	0·4
23	23 54 56·59	0·07	0·13	1 22 42·9	0·4		4
24	23 54 58·25	0·07	0·13	1 22 34·5	0·3		
25	23 54 59·72	0·06	0·13	1 22 27·2	0·3		
26	23 55 1·02	0·05	0·13	1 22 21·2	0·2		
27	23 55 2·15	0·05	0·13	1 22 16·2	0·2		
28	23 55 3·09	0·04	0·13	1 22 12·4	0·1		
29	23 55 3·86	0·03	0·13	1 22 9·8	+ 0·1		
30	23 55 4·46	0·02	0·13	1 22 8·2	0·1		
31	23 55 4·88	+ 0·01	0·13	S. 1 22 7·9	0		

JULY, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	h m s 23 55 4.60	S. 1 22 8.0	1.2982378	h m 17 15.7	o i n 355 28 34.9	S. 0 45 27.3	1.3029337
2	23 55 4.96	1 22 7.9	.2978787	17 11.8	355 29 13.6	0 45 27.2	.3029333
3	23 55 5.15	1 22 9.0	.2975206	17 7.9	355 29 52.4	0 45 27.1	.3029330
4	23 55 5.16	1 22 11.3	.2971635	17 4.0	355 30 31.1	0 45 27.0	.3029326
5	23 55 4.99	1 22 14.7	.2968077	17 0.1	355 31 9.8	0 45 26.9	.3029323
6	23 55 4.65	1 22 19.3	.2964531	16 56.1	355 31 48.6	0 45 26.8	.3029319
7	23 55 4.12	1 22 25.0	.2960999	16 52.2	355 32 27.3	0 45 26.7	.3029316
8	23 55 3.42	1 22 31.9	.2957483	16 48.2	355 33 6.0	0 45 26.6	.3029312
9	23 55 2.54	1 22 39.9	.2953982	16 44.3	355 33 44.8	0 45 26.5	.3029309
10	23 55 1.49	1 22 49.1	.2950499	16 40.3	355 34 23.5	0 45 26.3	.3029305
11	23 55 0.26	1 22 59.4	.2947034	16 36.4	355 35 2.2	0 45 26.2	.3029302
12	23 54 58.85	1 23 10.9	.2943589	16 32.4	355 35 40.9	0 45 26.1	.3029298
13	23 54 57.27	1 23 23.4	.2940165	16 28.4	355 36 19.7	0 45 26.0	.3029295
14	23 54 55.52	1 23 37.1	.2936761	16 24.4	355 36 58.4	0 45 25.9	.3029291
15	23 54 53.60	1 23 51.9	.2933381	16 20.5	355 37 37.1	0 45 25.8	.3029287
16	23 54 51.50	1 24 7.8	.2930024	16 16.5	355 38 15.8	0 45 25.7	.3029284
17	23 54 49.23	1 24 24.7	.2926691	16 12.6	355 38 54.5	0 45 25.6	.3029280
18	23 54 46.80	1 24 42.8	.2923384	16 8.6	355 39 33.3	0 45 25.5	.3029276
19	23 54 44.20	1 25 1.9	.2920103	16 4.6	355 40 12.0	0 45 25.4	.3029273
20	23 54 41.43	1 25 22.0	.2916850	16 0.6	355 40 50.7	0 45 25.2	.3029269
21	23 54 38.49	1 25 43.2	.2913625	15 56.6	355 41 29.4	0 45 25.1	.3029266
22	23 54 35.39	1 26 5.5	.2910430	15 52.6	355 42 8.1	0 45 25.0	.3029262
23	23 54 32.13	1 26 28.8	.2907265	15 48.7	355 42 46.9	0 45 24.9	.3029259
24	23 54 28.71	1 26 53.2	.2904133	15 44.7	355 43 25.6	0 45 24.8	.3029255
25	23 54 25.13	1 27 18.6	.2901032	15 40.7	355 44 4.3	0 45 24.7	.3029251
26	23 54 21.38	1 27 45.0	.2897965	15 36.7	355 44 43.0	0 45 24.6	.3029248
27	23 54 17.48	1 28 12.4	.2894933	15 32.7	355 45 21.7	0 45 24.5	.3029244
28	23 54 13.42	1 28 40.8	.2891936	15 28.7	355 46 0.4	0 45 24.4	.3029240
29	23 54 9.20	1 29 10.2	.2888975	15 24.7	355 46 39.2	0 45 24.3	.3029237
30	23 54 4.83	1 29 40.6	.2886051	15 20.7	355 47 17.9	0 45 24.1	.3029233
31	23 54 0.31	1 30 11.9	.2883166	15 16.7	355 47 56.6	0 45 24.0	.3029229
32	23 53 55.63	S. 1 30 44.2	1.2880320	15 12.6	355 48 35.3	S. 0 45 23.9	1.3029225

JULY, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	23 55 4 ^h 88 ^m	+ 0 ^s 01	0 ^s 13	S. 1 22 7 ^o 9 ⁱ	0 ^h 0	1 ^h 9	0 ^h 4
2	23 55 5 ^h 11 ^m	+ 0 ^s 01	0 ^s 13	1 22 8 ^o 6 ⁱ	- 0 ^h 1	1 ^h 9	0 ^h 4
3	23 55 5 ^h 18 ^m	0 ^s 00	0 ^s 13	1 22 10 ^o 5 ⁱ	0 ^h 1	1 ^h 9	0 ^h 4
4	23 55 5 ^h 06 ^m	- 0 ^s 01	0 ^s 13	1 22 13 ^o 6 ⁱ	0 ^h 2	1 ^h 9	0 ^h 4
5	23 55 4 ^h 77 ^m	0 ^s 02	0 ^s 13	1 22 17 ^o 8 ⁱ	0 ^h 2	1 ^h 9	0 ^h 4
6	23 55 4 ^h 30 ^m	0 ^s 02	0 ^s 13	1 22 23 ^o 2 ⁱ	0 ^h 2	1 ^h 9	0 ^h 4
7	23 55 3 ^h 65 ^m	0 ^s 03	0 ^s 13	1 22 29 ^o 7 ⁱ	0 ^h 3	1 ^h 9	0 ^h 4
8	23 55 2 ^h 83 ^m	0 ^s 04	0 ^s 13	1 22 37 ^o 4 ⁱ	0 ^h 3	1 ^h 9	0 ^h 4
9	23 55 1 ^h 83 ^m	0 ^s 05	0 ^s 13	1 22 46 ^o 2 ⁱ	0 ^h 4	1 ^h 9	0 ^h 4
10	23 55 0 ^h 66 ^m	0 ^s 05	0 ^s 13	1 22 56 ^o 2 ⁱ	0 ^h 4	1 ^h 9	0 ^h 4
11	23 54 59 ^h 31 ^m	0 ^s 06	0 ^s 13	1 23 7 ^o 3 ⁱ	0 ^h 5	1 ^h 9	0 ^h 4
12	23 54 57 ^h 79 ^m	0 ^s 07	0 ^s 13	1 23 19 ^o 5 ⁱ	0 ^h 5	1 ^h 9	0 ^h 4
13	23 54 56 ^h 09 ^m	0 ^s 07	0 ^s 13	1 23 32 ^o 7 ⁱ	0 ^h 6	1 ^h 9	0 ^h 4
14	23 54 54 ^h 23 ^m	0 ^s 08	0 ^s 13	1 23 47 ^o 1 ⁱ	0 ^h 6	1 ^h 9	0 ^h 4
15	23 54 52 ^h 19 ^m	0 ^s 09	0 ^s 13	1 24 2 ^o 6 ⁱ	0 ^h 7	1 ^h 9	0 ^h 4
16	23 54 49 ^h 98 ^m	0 ^s 10	0 ^s 13	1 24 19 ^o 2 ⁱ	0 ^h 7	1 ^h 9	0 ^h 4
17	23 54 47 ^h 60 ^m	0 ^s 10	0 ^s 13	1 24 36 ^o 8 ⁱ	0 ^h 8	1 ^h 9	0 ^h 4
18	23 54 45 ^h 07 ^m	0 ^s 11	0 ^s 13	1 24 55 ^o 6 ⁱ	0 ^h 8	1 ^h 9	0 ^h 4
19	23 54 42 ^h 36 ^m	0 ^s 12	0 ^s 13	1 25 15 ^o 3 ⁱ	0 ^h 8	1 ^h 9	0 ^h 4
20	23 54 39 ^h 49 ^m	0 ^s 12	0 ^s 13	1 25 36 ^o 1 ⁱ	0 ^h 9	1 ^h 9	0 ^h 4
21	23 54 36 ^h 45 ^m	0 ^s 13	0 ^s 13	1 25 57 ^o 9 ⁱ	0 ^h 9	1 ^h 9	0 ^h 4
22	23 54 33 ^h 25 ^m	0 ^s 14	0 ^s 13	1 26 20 ^o 8 ⁱ	1 ^h 0		0 ^h 4
23	23 54 29 ^h 89 ^m	0 ^s 15	0 ^s 13	1 26 44 ^o 7 ⁱ	1 ^h 0		4
24	23 54 26 ^h 38 ^m	0 ^s 15	0 ^s 13	1 27 9 ^o 7 ⁱ	1 ^h 1		4
25	23 54 22 ^h 70 ^m	0 ^s 16	0 ^s 13	1 27 35 ^o 7 ⁱ	1 ^h 1		
26	23 54 18 ^h 86 ^m	0 ^s 16	0 ^s 13	1 28 2 ^o 7 ⁱ	1 ^h 1		
27	23 54 14 ^h 87 ^m	0 ^s 17	0 ^s 13	1 28 30 ^o 7 ⁱ	1 ^h 1		
28	23 54 10 ^h 72 ^m	0 ^s 18	0 ^s 13	1 28 59 ^o 7 ⁱ			
29	23 54 6 ^h 41 ^m	0 ^s 18	0 ^s 13	1 29 29 ^o 6 ⁱ			
30	23 54 1 ^h 96 ^m	0 ^s 19	0 ^s 13	1 30 0 ^o 5 ⁱ			
31	23 53 57 ^h 35 ^m	0 ^s 20	0 ^s 13	1 30 32 ^o 3 ⁱ			
32	23 53 52 ^h 39 ^m	- 0 ^s 20	0 ^s 13	S. 1 31 5 ^o 1 ⁱ			

AUGUST, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
1	h m s 23 53 55.63	S. ° ' " 1 30 44.2	1.2880320	h m 15 12.6	° ' " 355 48 35.3	S. ° ' " 0 45 23.9	1.3029225
2	23 53 50.80	1 31 17.4	.2877514	15 8.6	355 49 14.0	0 45 23.8	.3029222
3	23 53 45.83	1 31 51.6	.2874750	15 4.6	355 49 52.7	0 45 23.7	.3029218
4	23 53 40.71	1 32 26.7	.2872029	15 0.6	355 50 31.4	0 45 23.6	.3029214
5	23 53 35.45	1 33 2.7	.2869352	14 56.6	355 51 10.1	0 45 23.5	.3029210
6	23 53 30.04	1 33 39.6	.2866719	14 52.6	355 51 48.8	0 45 23.4	.3029206
7	23 53 24.50	1 34 17.4	.2864132	14 48.5	355 52 27.5	0 45 23.3	.3029202
8	23 53 18.82	1 34 56.0	.2861591	14 44.5	355 53 6.2	0 45 23.1	.3029199
9	23 53 13.00	1 35 35.5	.2859098	14 40.5	355 53 44.9	0 45 23.0	.3029195
10	23 53 7.05	1 36 15.8	.2856653	14 36.5	355 54 23.6	0 45 22.9	.3029191
11	23 53 0.97	1 36 57.0	.2854256	14 32.4	355 55 2.3	0 45 22.8	.3029187
12	23 52 54.77	1 37 38.9	.2851910	14 28.4	355 55 41.0	0 45 22.7	.3029183
13	23 52 48.44	1 38 21.6	.2849614	14 24.3	355 56 19.7	0 45 22.6	.3029179
14	23 52 41.98	1 39 5.1	.2847370	14 20.3	355 56 58.4	0 45 22.5	.3029175
15	23 52 35.41	1 39 49.3	.2845179	14 16.3	355 57 37.0	0 45 22.4	.3029171
16	23 52 28.72	1 40 34.2	.2843041	14 12.3	355 58 15.7	0 45 22.2	.3029167
17	23 52 21.92	1 41 19.8	.2840956	14 8.2	355 58 54.4	0 45 22.1	.3029163
18	23 52 15.01	1 42 6.1	.2838926	14 4.2	355 59 33.1	0 45 22.0	.3029159
19	23 52 7.98	1 42 53.0	.2836952	14 0.1	356 0 11.8	0 45 21.9	.3029155
20	23 52 0.85	1 43 40.6	.2835034	13 56.1	356 0 50.3	0 45 21.8	.3029151
21	23 51 53.62	1 44 28.8	.2833172	13 52.0	356 1 29.2	0 45 21.7	.3029147
22	23 51 46.29	1 45 17.6	.2831367	13 47.9	356 2 7.8	0 45 21.6	.3029143
23	23 51 38.86	1 46 7.1	.2829620	13 43.8	356 2 46.5	0 45 21.5	.3029138
24	23 51 31.33	1 46 57.1	.2827931	13 39.8	356 3 25.2	0 45 21.3	.3029134
25	23 51 23.71	1 47 47.7	.2826301	13 35.7	356 4 3.9	0 45 21.2	.3029130
26	23 51 16.00	1 48 38.8	.2824731	13 31.7	356 4 42.6	0 45 21.1	.3029126
27	23 51 8.20	1 49 30.5	.2823222	13 27.6	356 5 21.3	0 45 21.0	.3029122
28	23 51 0.32	1 50 22.7	.2821774	13 23.6	356 5 59.9	0 45 20.9	.3029118
29	23 50 52.36	1 51 15.3	.2820388	13 19.5	356 6 38.6	0 45 20.8	.3029114
30	23 50 44.32	1 52 8.4	.2819064	13 15.4	356 7 17.3	0 45 20.7	.3029110
31	23 50 36.20	1 52 1.9	.2817803	13 11.3	356 7 56.0	0 45 20.5	.3029106
32	23 50 28.01	S. 1 53 55.9	1.2816606	13 7.3	356 8 34.6	S. 0 45 20.4	1.3029101

AUGUST, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 23 ^m 53 ^s 52·59	— 0·20	0·13	S. 1 31 5·1	— 1·4	1·9	0·4
2	23 53 47·68	0·21	0·13	1 31 38·8	1·4	1·9	0·4
3	23 53 42·63	0·21	0·13	1 32 13·5	1·5	1·9	0·4
4	23 53 37·44	0·22	0·13	1 32 49·1	1·5	1·9	0·4
5	23 53 32·10	0·23	0·13	1 33 25·5	1·5	1·9	0·4
6	23 53 26·62	0·23	0·13	1 34 2·8	1·6	1·9	0·4
7	23 53 21·01	0·24	0·13	1 34 41·1	1·6	1·9	0·4
8	23 53 15·27	0·24	0·13	1 35 20·1	1·6	1·9	0·4
9	23 53 9·38	0·25	0·13	1 36 0·0	1·7	1·9	0·4
10	23 53 3·37	0·25	0·13	1 36 40·7	1·7	1·9	0·4
11	23 52 57·23	0·26	0·13	1 37 22·3	1·7	1·9	0·4
12	23 52 50·97	0·26	0·13	1 38 4·5	1·8	1·9	0·4
13	23 52 44·58	0·27	0·13	1 38 47·6	1·8	1·9	0·4
14	23 52 38·07	0·27	0·13	1 39 31·4	1·8	1·9	0·4
15	23 52 31·44	0·28	0·13	1 40 15·9	1·9	1·9	0·4
16	23 52 24·70	0·28	0·13	1 41 1·1	1·9	1·9	0·4
17	23 52 17·86	0·29	0·13	1 41 47·0	1·9	1·9	0·4
18	23 52 10·90	0·29	0·13	1 42 33·5	2·0	1·9	0·4
19	23 52 3·83	0·30	0·13	1 43 20·7	2·0	1·9	0·4
20	23 51 56·66	0·30	0·13	1 44 8·5	2·0	1·9	0·4
21	23 51 49·39	0·30	0·13	1 44 56·9	2·0	1·9	0·4
22	23 51 42·03	0·31	0·13	1 45 45·9	2·1	1·9	0·4
23	23 51 34·56	0·31	0·13	1 46 35·6	2·1	1·9	0·4
24	23 51 27·00	0·32	0·13	1 47 25·8	2·1	1·9	0·4
25	23 51 19·35	0·32	0·13	1 48 16·6	2·1	1·9	0·4
26	23 51 11·62	0·32	0·13	1 49 7·9	2·1	1·9	0·4
27	23 51 3·79	0·33	0·13	1 49 59·7	2·1	1·9	0·4
28	23 50 55·89	0·33	0·13	1 50 51·1	2·1	1·9	0·4
29	23 50 47·91	0·33	0·13	1 51 42·4	2·1	1·9	0·4
30	23 50 39·85	0·34	0·13	1 52 33·7	2·1	1·9	0·4
31	23 50 31·71	0·34	0·13	1 53 25·0	2·1	1·9	0·4
32	23 50 23·50	— 0·34	0·13	S. 1 54 16·3	2·1	1·9	0·4

SEPTEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vec.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	^h ^m ^s	^o ['] ["]		^h ^m	^o ['] ["]	^o ['] ["]	
1	23 50 28.01	S. 1 53 55.9	1.2816606	13 7.3	356 8 34.6	S. 0 45 20.4	1.302911
2	23 50 19.76	1 54 50.2	.2815473	13 3.2	356 9 13.3	0 45 20.3	.302909
3	23 50 11.44	1 55 44.9	.2814405	12 59.2	356 9 52.0	0 45 20.2	.302907
4	23 50 3.07	1 56 40.0	.2813401	12 55.1	356 10 30.6	0 45 20.1	.302905
5	23 49 54.63	1 57 35.3	.2812464	12 51.0	356 11 9.3	0 45 19.9	.302903
6	23 49 46.14	1 58 31.0	.2811592	12 46.9	356 11 48.0	0 45 19.8	.302901
7	23 49 37.60	1 59 26.9	.2810787	12 42.9	356 12 26.6	0 45 19.7	.302907
8	23 49 29.02	2 0 23.1	.2810049	12 38.8	356 13 5.3	0 45 19.6	.302907
9	23 49 20.39	2 1 19.5	.2809378	12 34.7	356 13 44.0	0 45 19.5	.302906
10	23 49 11.73	2 2 16.1	.2808775	12 30.6	356 14 22.6	0 45 19.3	.302906
11	23 49 3.03	2 3 12.9	.2808239	12 26.6	356 15 1.3	0 45 19.2	.302906
12	23 48 54.30	2 4 9.8	.2807772	12 22.5	356 15 40.0	0 45 19.1	.302905
13	23 48 45.54	2 5 6.9	.2807373	12 18.4	356 16 18.6	0 45 19.0	.302905
14	23 48 36.76	2 6 4.0	.2807042	12 14.3	356 16 57.3	0 45 18.9	.302904
15	23 48 27.96	2 7 1.2	.2806778	12 10.3	356 17 36.0	0 45 18.8	.302904
16	23 48 19.15	2 7 58.5	.2806583	12 6.2	356 18 14.6	0 45 18.6	.302904
17	23 48 10.32	2 8 55.8	.2806455	12 2.1	356 18 53.3	0 45 18.5	.302903
18	23 48 1.48	2 9 53.1	.2806396	11 58.0	356 19 32.0	0 45 18.4	.302903
19	23 47 52.64	2 10 50.4	.2806405	11 53.9	356 20 10.6	0 45 18.3	.3029027
20	23 47 43.79	2 11 47.7	.2806483	11 49.8	356 20 49.3	0 45 18.2	.3029023
21	23 47 34.95	2 12 44.9	.2806629	11 45.8	356 21 28.0	0 45 18.0	.3029019
22	23 47 26.10	2 13 42.0	.2806844	11 41.7	356 22 6.7	0 45 17.9	.3029015
23	23 47 17.27	2 14 39.0	.2807127	11 37.6	356 22 45.3	0 45 17.8	.3029010
24	23 47 8.45	2 15 35.9	.2807479	11 33.5	356 23 24.0	0 45 17.7	.3029006
25	23 46 59.65	2 16 32.6	.2807899	11 29.5	356 24 2.6	0 45 17.5	.3029002
26	23 46 50.86	2 17 29.2	.2808388	11 25.4	356 24 41.3	0 45 17.4	.3028998
27	23 46 42.10	2 18 25.6	.2808945	11 21.3	356 25 20.0	0 45 17.3	.3028993
28	23 46 33.36	2 19 21.7	.2809571	11 17.2	356 25 58.6	0 45 17.2	.3028989
29	23 46 24.65	2 20 17.6	.2810265	11 13.2	356 26 37.3	0 45 17.1	.3028985
30	23 46 15.98	2 21 13.3	.2811026	11 9.1	356 27 16.0	0 45 16.9	.3028981
31	23 46 7.34	S. 2 22 8.6	1.2811856	11 5.0	356 27 54.6	S. 0 45 16.8	1.3028976

SEPTEMBER, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Std. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 23 ^m 50 ^s 23·50	— 0·34	0·13	S. 1 54 25·6	— 2·3	1·9	0·4
2	23 50 15·24	0·35	0·13	1 55 19·9	2·3	1·9	0·4
3	23 50 6·91	0·35	0·13	1 56 14·6	2·3	1·9	0·4
4	23 49 58·53	0·35	0·13	1 57 9·7	2·3	1·9	0·4
5	23 49 50·09	0·35	0·13	1 58 5·0	2·3	1·9	0·4
6	23 49 41·60	0·36	0·13	1 59 0·7	2·3	1·9	0·4
7	23 49 33·05	0·36	0·14	1 59 56·6	2·3	2·0	0·4
8	23 49 24·47	0·36	0·14	2 0 52·8	2·3	2·0	0·4
9	23 49 15·84	0·36	0·14	2 1 49·1	2·3	2·0	0·4
10	23 49 7·19	0·36	0·14	2 2 45·6	2·4	2·0	0·4
11	23 48 58·50	0·36	0·14	2 3 42·4	2·4	2·0	0·4
12	23 48 49·78	0·36	0·14	2 4 39·2	2·4	2·0	0·4
13	23 48 41·03	0·36	0·14	2 5 36·2	2·4	2·0	0·4
14	23 48 32·27	0·37	0·14	2 6 33·2	2·4	2·0	0·4
15	23 48 23·49	0·37	0·14	2 7 30·3	2·4	2·0	0·4
16	23 48 14·70	0·37	0·14	2 8 27·4	2·4	2·0	0·4
17	23 48 5·89	0·37	0·14	2 9 24·5	2·4	2·0	0·4
18	23 47 57·07	0·37	0·14	2 10 21·7	2·4	2·0	0·4
19	23 47 48·26	0·37	0·14	2 11 18·8	2·4	2·0	0·4
20	23 47 39·43	0·37	0·14	2 12 15·9	2·4	2·0	0·4
21	23 47 30·62	0·37	0·14	2 13 12·9	2·4	2·0	0·4
22	23 47 21·79	0·37	0·14	2 14 9·8	2·4	2·0	0·4
23	23 47 12·99	0·37	0·14	2 15 6·5	2·4	2·0	0·4
24	23 47 4·20	0·37	0·14	2 16 3·2	2·4	2·0	0·4
25	23 46 55·43	0·37	0·14	2 16 59·7	2·3	2·0	
26	23 46 46·68	0·36	0·14	2 17 56·0	2·3	2·0	
27	23 46 37·96	0·36	0·14	2 18 52·2	2·3	2	
28	23 46 29·26	0·36	0·14	2 19 48·0	2·3	2	
29	23 46 20·59	0·36	0·14	2 20 43·6	2·3	2	
30	23 46 11·96	0·36	0·13	2 21 39·0	2·3	1	
31	23 46 3·37	— 0·36	0·13	S. 2 22 34·0	— 2·3	1	

OCTOBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	^h ^m ^s	^o ['] ["]		^h ^m	^o ['] ["]	^o ['] ["]	
1	23 46 7.34	S. 22 8'6"	1.2811856	11 5'0"	356 27 54'6"	S. 0 45 16'8"	1.3028976
2	23 45 58'75	2 23 3'6"	.2812754	11 0'9"	356 28 33'3"	0 45 16'7"	.3028972
3	23 45 50'20	2 23 58'2"	.2813719	10 56'9"	356 29 12'0"	0 45 16'6"	.3028968
4	23 45 41'70	2 24 52'5"	.2814751	10 52'8"	356 29 50'6"	0 45 16'5"	.3028963
5	23 45 38'26	2 25 46'4"	.2815850	10 48'7"	356 30 29'3"	0 45 16'3"	.3028959
6	23 45 24'87	2 26 39'8"	.2817015	10 44'6"	356 31 8'0"	0 45 16'2"	.3028954
7	23 45 16'55	2 27 32'8"	.2818246	10 40'6"	356 31 46'6"	0 45 16'1"	.3028950
8	23 45 8'29	2 28 25'3"	.2819543	10 36'5"	356 32 25'3"	0 45 16'0"	.3028946
9	23 45 0'10	2 29 17'3"	.2820905	10 32'5"	356 33 4'0"	0 45 15'9"	.3028941
10	23 44 51'99	2 30 8'8"	.2822331	10 28'4"	356 33 42'7"	0 45 15'7"	.3028937
11	23 44 43'95	2 30 59'8"	.2823821	10 24'3"	356 34 21'3"	0 45 15'6"	.3028932
12	23 44 35'98	2 31 50'2"	.2825374	10 20'2"	356 35 0'0"	0 45 15'5"	.3028928
13	23 44 28'10	2 32 40'1"	.2826990	10 16'2"	356 35 38'7"	0 45 15'4"	.3028923
14	23 44 20'31	2 33 29'3"	.2828669	10 12'1"	356 36 17'4"	0 45 15'3"	.3028919
15	23 44 12'60	2 34 17'9"	.2830408	10 8'0"	356 36 56'0"	0 45 15'1"	.3028914
16	23 44 4'99	2 35 5'8"	.2832209	10 4'0"	356 37 34'7"	0 45 15'0"	.3028910
17	23 43 57'47	2 35 53'1"	.2834069	9 59'9"	356 38 13'4"	0 45 14'9"	.3028905
18	23 43 50'05	2 36 39'7"	.2835988	9 55'9"	356 38 52'1"	0 45 14'8"	.3028901
19	23 43 42'73	2 37 25'6"	.2837967	9 51'8"	356 39 30'7"	0 45 14'7"	.3028896
20	23 43 35'51	2 38 10'8"	.2840004	9 47'8"	356 40 9'4"	0 45 14'5"	.3028892
21	23 43 28'40	2 38 55'2"	.2842099	9 43'7"	356 40 48'1"	0 45 14'4"	.3028887
22	23 43 21'40	2 39 38'9"	.2844250	9 39'7"	356 41 26'8"	0 45 14'3"	.3028882
23	23 43 14'52	2 40 21'9"	.2846458	9 35'6"	356 42 5'5"	0 45 14'2"	.3028878
24	23 43 7'75	2 41 4'0"	.2848721	9 31'6"	356 42 44'2"	0 45 14'1"	.3028873
25	23 43 1'10	2 41 45'3"	.2851039	9 27'5"	356 43 22'9"	0 45 13'9"	.3028869
26	23 42 54'58	2 42 25'8"	.2853411	9 23'5"	356 44 1'5"	0 45 13'8"	.3028864
27	23 42 48'18	2 43 5'4"	.2855836	9 19'5"	356 44 40'2"	0 45 13'7"	.3028859
28	23 42 41'91	2 43 44'2"	.2858313	9 15'5"	356 45 18'9"	0 45 13'6"	.3028855
29	23 42 35'77	2 44 22'1"	.2860842	9 11'4"	356 45 57'6"	0 45 13'5"	.3028850
30	23 42 29'76	2 44 59'1"	.2863421	9 7'4"	356 46 36'3"	0 45 13'3"	.3028846
31	23 42 23'89	2 45 35'2"	.2866051	9 3'3"	356 47 15'0"	0 45 13'2"	.3028841
32	23 42 18'16	S. 2 46 10'3"	1.2868729	8 59'3"	356 47 53'7"	S. 0 45 13'1"	1.3028836

OCTOBER, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
	<i>h m s</i>	<i>s</i>	<i>s</i>	<i>o ' "</i>	<i>"</i>	<i>"</i>	<i>"</i>
1	23 46 3 37	- 0 36	0 13	S. 2 22 34 0	- 2 3	1 9	0 4
2	23 45 54 32	0 36	0 13	2 23 28 7	2 3	1 9	0 4
3	23 45 46 32	0 35	0 13	2 24 23 0	2 3	1 9	0 4
4	23 45 37 37	0 35	0 13	2 25 17 0	2 2	1 9	0 4
5	23 45 29 48	0 35	0 13	2 26 10 5	2 2	1 9	0 4
6	23 45 21 14	0 35	0 13	2 27 3 6	2 2	1 9	0 4
7	23 45 12 37	0 34	0 13	2 27 56 3	2 2	1 9	0 4
8	23 45 4 66	0 34	0 13	2 28 48 4	2 2	1 9	0 4
9	23 44 56 53	0 34	0 13	2 29 40 1	2 1	1 9	0 4
10	23 44 48 47	0 33	0 13	2 30 31 2	2 1	1 9	0 4
11	23 44 40 49	0 33	0 13	2 31 21 8	2 1	1 9	0 4
12	23 44 32 58	0 33	0 13	2 32 11 8	2 1	1 9	0 4
13	23 44 24 75	0 32	0 13	2 33 1 3	2 0	1 9	0 4
14	23 44 17 02	0 32	0 13	2 33 50 1	2 0	1 9	0 4
15	23 44 9 37	0 32	0 13	2 34 38 3	2 0	1 9	0 4
16	23 44 1 33	0 31	0 13	2 35 25 8	2 0	1 9	0 4
17	23 43 54 37	0 31	0 13	2 36 12 6	1 9	1 9	0 4
18	23 43 47 01	0 30	0 13	2 36 58 8	1 9	1 9	0 4
19	23 43 39 76	0 30	0 13	2 37 44 3	1 9	1 9	0 4
20	23 43 32 60	0 30	0 13	2 38 29 0	1 8	1 9	0 4
21	23 43 25 55	0 29	0 13	2 39 13 0	1 8	1 9	0 4
22	23 43 18 62	0 29	0 13	2 39 56 3	1 8	1 9	0 4
23	23 43 11 30	0 28	0 13	2 40 38 8	1 8	1 9	0 4
24	23 43 5 10	0 28	0 13	2 41 20 5	1 7	1 9	
25	23 42 58 51	0 27	0 13	2 42 1 4	1 7	1	
26	23 42 52 06	0 27	0 13	2 42 41 4	1 7	1	
27	23 42 45 73	0 26	0 13	2 43 20 6	1 6	1	
28	23 42 39 52	0 26	0 13	2 43 59 0	1 6	1	
29	23 42 33 45	0 25	0 13	2 44 36 4	1 5	1	
30	23 42 27 51	0 24	0 13	2 45 13 0	1 5	1	
31	23 42 21 71	0 24	0 13	2 45 48 6	1 5	1	
32	23 42 16 05	- 0 23	0 13	S. 2 46 23 2	- 1 4	1 9	

NOVEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ' "		h m	° ' "	° ' "	
1	23 42 18.16	S. 2 46 10.3	1.2868729	8 59.3	356 47 53.7	S. 0 45 13.1	1.302883
2	23 42 12.57	2 46 44.5	.2871456	8 55.3	356 48 32.4	0 45 13.0	.302883
3	23 42 7.13	2 47 17.6	.2874229	8 51.3	356 49 11.1	0 45 12.9	.302882
4	23 42 1.84	2 47 49.8	.2877049	8 47.3	356 49 49.8	0 45 12.7	.302882
5	23 41 56.69	2 48 21.0	.2879914	8 43.3	356 50 28.5	0 45 12.6	.302881
6	23 41 51.70	2 48 51.2	.2882823	8 39.2	356 51 7.2	0 45 12.5	.302881
7	23 41 46.86	2 49 20.3	.2885776	8 35.2	356 51 46.0	0 45 12.4	.302880
8	23 41 42.18	2 49 48.4	.2888769	8 31.2	356 52 24.7	0 45 12.3	.302880
9	23 41 37.65	2 50 15.4	.2891803	8 27.2	356 53 3.4	0 45 12.1	.302879
10	23 41 33.29	2 50 41.3	.2894876	8 23.2	356 53 42.1	0 45 12.0	.302879
11	23 41 29.09	2 51 6.2	.2897988	8 19.2	356 54 20.8	0 45 11.9	.302879
12	23 41 25.05	2 51 30.0	.2901137	8 15.2	356 54 59.6	0 45 11.8	.302878
13	23 41 21.18	2 51 52.7	.2904322	8 11.2	356 55 38.3	0 45 11.7	.302878
14	23 41 17.48	2 52 14.3	.2907542	8 7.2	356 56 17.0	0 45 11.6	.302877
15	23 41 13.95	2 52 34.8	.2910796	8 3.2	356 56 55.7	0 45 11.4	.302877
16	23 41 10.58	2 52 54.2	.2914082	7 59.2	356 57 34.4	0 45 11.3	.302876
17	23 41 7.39	2 53 12.4	.2917401	7 55.3	356 58 13.2	0 45 11.2	.302876
18	23 41 4.37	2 53 29.5	.2920750	7 51.3	356 58 51.9	0 45 11.1	.302875
19	23 41 1.53	2 53 45.4	.2924128	7 47.3	356 59 30.6	0 45 11.0	.302875
20	23 40 58.86	2 54 0.2	.2927535	7 43.3	357 0 9.4	0 45 10.8	.302874
21	23 40 56.37	2 54 13.7	.2930969	7 39.4	357 0 48.1	0 45 10.7	.302874
22	23 40 54.06	2 54 26.1	.2934429	7 35.4	357 1 26.8	0 45 10.6	.302873
23	23 40 51.92	2 54 37.4	.2937914	7 31.4	357 2 5.6	0 45 10.5	.302873
24	23 40 49.97	2 54 47.4	.2941424	7 27.4	357 2 44.3	0 45 10.3	.302872
25	23 40 48.20	2 54 56.3	.2944956	7 23.5	357 3 23.0	0 45 10.2	.302872
26	23 40 46.61	2 55 4.0	.2948511	7 19.5	357 4 1.8	0 45 10.1	.302871
27	23 40 45.21	2 55 10.5	.2952088	7 15.6	357 4 40.5	0 45 10.0	.302871
28	23 40 43.99	2 55 15.8	.2955684	7 11.6	357 5 19.3	0 45 9.9	.302870
29	23 40 42.96	2 55 19.9	.2959298	7 7.7	357 5 58.0	0 45 9.7	.302870
30	23 40 42.12	2 55 22.7	.2962931	7 3.7	357 6 36.8	0 45 9.6	.302869
31	23 40 41.46	S. 2 55 24.3	1.2966579	6 59.8	357 7 15.5	S. 0 45 9.5	1.302869

NOVEMBER, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.			Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.			Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.		
	h	m	s	"	"	°	'	"	"	"	"		
1	23	42	16	05	- 0'23	0'13	S. 2	46	23	2	- 1'4	1'9	0'4
2	23	42	10	53	0'23	0'13	2	46	57	0	1'4	1'9	0'4
3	23	42	5	16	0'22	0'13	2	47	29	7	1'3	1'9	0'4
4	23	41	59	94	0'21	0'13	2	48	1	4	1'3	1'9	0'4
5	23	41	54	86	0'21	0'13	2	48	32	2	1'3	1'9	0'4
6	23	41	49	94	0'20	0'13	2	49	1	9	1'2	1'9	0'4
7	23	41	45	17	0'20	0'13	2	49	30	5	1'2	1'9	0'4
8	23	41	40	56	0'19	0'13	2	49	58	1	1'1	1'9	0'4
9	23	41	36	10	0'18	0'13	2	50	24	6	1'1	1'9	0'4
10	23	41	31	81	0'18	0'13	2	50	50	1	1'0	1'9	0'4
11	23	41	27	68	0'17	0'13	2	51	14	5	1'0	1'9	0'4
12	23	41	23	70	0'16	0'13	2	51	37	9	1'0	1'9	0'4
13	23	41	19	90	0'15	0'13	2	52	0	2	0'9	1'9	0'4
14	23	41	16	27	0'15	0'13	2	52	21	3	0'9	1'9	0'4
15	23	41	12	80	0'14	0'13	2	52	41	4	0'8	1'9	0'4
16	23	41	9	50	0'13	0'13	2	53	0	4	0'8	1'9	0'4
17	23	41	6	37	0'13	0'13	2	53	18	1	0'7	1'9	0'4
18	23	41	3	42	0'12	0'13	2	53	34	8	0'7	1'9	0'4
19	23	41	0	64	0'11	0'13	2	53	50	3	0'6	1'9	0'4
20	23	40	58	03	0'10	0'13	2	54	4	7	0'6	1'9	0'4
21	23	40	55	61	0'10	0'13	2	54	17	8	0'5	1'9	0'4
22	23	40	53	36	0'09	0'13	2	54	29	8	0'5	1'9	0'4
23	23	40	51	28	0'08	0'13	2	54	40	7	0'4	1'9	0'4
24	23	40	49	40	0'07	0'13	2	54	50	3	0'4	1'9	0'4
25	23	40	47	69	0'07	0'13	2	54	58	8	0'3	1'9	0'4
26	23	40	46	16	0'06	0'13	2	55	6	1	0'3	1'9	0'4
27	23	40	44	82	0'05	0'13	2	55	12	2	0'2	1'9	0'4
28	23	40	43	66	0'04	0'13	2	55	17	1	0'2	1'9	0'4
29	23	40	42	69	0'04	0'13	2	55	20	8	0'1	1'9	0'4
30	23	40	41	90	0'03	0'13	2	55	23	2	- 0'1	1'9	0'4
31	23	40	41	30	- 0'02	0'13	S. 2	55	24	5	0'0	1'9	0'4

DECEMBER, 1842.

MEAN TIME.

Day of the Month.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	° ' "		h m	° ' "	° ' "	
1	23 40 41.46	S. 2 55 24.3	1.2966579	6 59.8	357 7 15.3	S. 0 45 9.5	1.302869
2	23 40 40.99	2 55 24.6	.2970241	6 55.8	357 7 54.3	0 45 9.4	.302868
3	23 40 40.72	2 55 23.7	.2973917	6 51.9	357 8 33.0	0 45 9.2	.302868
4	23 40 40.63	2 55 21.6	.2977604	6 48.0	357 9 11.8	0 45 9.1	.302868
5	23 40 40.73	2 55 18.2	.2981303	6 44.1	357 9 50.3	0 45 9.0	.302867
6	23 40 41.03	2 55 13.6	.2985011	6 40.1	357 10 29.3	0 45 8.9	.302867
7	23 40 41.51	2 55 7.7	.2988728	6 36.2	357 11 8.0	0 45 8.7	.302866
8	23 40 42.19	2 55 0.6	.2992452	6 32.3	357 11 46.8	0 45 8.6	.302866
9	23 40 43.05	2 54 52.3	.2996183	6 28.4	357 12 25.5	0 45 8.5	.302865
10	23 40 44.11	2 54 42.8	.2999918	6 24.5	357 13 4.3	0 45 8.4	.302865
11	23 40 45.36	2 54 32.0	.3003658	6 20.6	357 13 43.1	0 45 8.2	.302864
12	23 40 46.79	2 54 20.0	.3007400	6 16.7	357 14 21.8	0 45 8.1	.302864
13	23 40 48.42	2 54 6.8	.3011143	6 12.8	357 15 0.6	0 45 8.0	.302863
14	23 40 50.23	2 53 52.4	.3014886	6 8.9	357 15 39.3	0 45 7.9	.302863
15	23 40 52.23	2 53 36.7	.3018629	6 5.0	357 16 18.1	0 45 7.7	.302862
16	23 40 54.42	2 53 19.8	.3022369	6 1.1	357 16 56.9	0 45 7.6	.302862
17	23 40 56.80	2 53 1.7	.3026107	5 57.2	357 17 35.6	0 45 7.5	.302861
18	23 40 59.37	2 52 42.4	.3029840	5 53.3	357 18 14.4	0 45 7.4	.302861
19	23 41 2.12	2 52 21.9	.3033568	5 49.4	357 18 53.1	0 45 7.2	.302860
20	23 41 5.06	2 52 0.2	.3037290	5 45.5	357 19 31.9	0 45 7.1	.302860
21	23 41 8.19	2 51 37.3	.3041005	5 41.6	357 20 10.7	0 45 7.0	.302859
22	23 41 11.50	2 51 13.3	.3044712	5 37.7	357 20 49.4	0 45 6.8	.302859
23	23 41 14.99	2 50 48.0	.3048409	5 33.9	357 21 28.2	0 45 6.7	.302858
24	23 41 18.68	2 50 21.5	.3052096	5 30.0	357 22 7.0	0 45 6.6	.302858
25	23 41 22.54	2 49 53.9	.3055772	5 26.2	357 22 45.7	0 45 6.5	.302857
26	23 41 26.58	2 49 25.1	.3059436	5 22.3	357 23 24.5	0 45 6.3	.302857
27	23 41 30.81	2 48 55.1	.3063086	5 18.4	357 24 3.2	0 45 6.2	.302856
28	23 41 35.22	2 48 23.9	.3066721	5 14.5	357 24 42.0	0 45 6.1	.302856
29	23 41 39.81	2 47 51.6	.3070341	5 10.7	357 25 20.8	0 45 5.9	.302855
30	23 41 44.57	2 47 18.1	.3073944	5 6.8	357 25 59.5	0 45 5.8	.302855
31	23 41 49.52	2 46 43.5	.3077529	5 3.0	357 26 38.3	0 45 5.7	.302854
32	23 41 54.65	S. 2 46 7.8	1.3081094	4 59.1	357 27 17.1	S. 0 45 5.6	1.3028540

DECEMBER, 1842.

At Transit over the Meridian of Greenwich.

Day of the Month.	Apparent Right Ascension.	Variation of Right Asc. in 1 Hour of Long.	Sid. Time of Sem. pass. Mer.	Apparent Declination.	Variation of Declination in 1 Hour of Long.	Semi-diameter.	Hor. Par.
1	^h 23 ^m 40 ^s 41' 30	- 0' 02	0' 13	S. 2 55 24' 3	0' 0	1' 9	0' 4
2	23 40 40' 89	0' 01	0' 13	2 55 24' 4	0' 0	1' 9	0' 4
3	23 40 40' 67	- 0' 01	0' 13	2 55 23' 1	+ 0' 1	1' 9	0' 4
4	23 40 40' 64	0' 00	0' 13	2 55 22' 7	0' 1	1' 9	0' 4
5	23 40 40' 80	+ 0' 01	0' 13	2 55 16' 9	0' 2	1' 9	0' 4
6	23 40 41' 15	0' 02	0' 13	2 55 12' 0	0' 2	1' 9	0' 4
7	23 40 41' 68	0' 03	0' 13	2 55 2' 8	0' 3	1' 9	0' 4
8	23 40 42' 40	0' 03	0' 13	2 54 58' 4	0' 3	1' 9	0' 4
9	23 40 43' 31	0' 04	0' 13	2 54 49' 8	0' 4	1' 9	0' 4
10	23 40 44' 42	0' 05	0' 13	2 54 40' 0	0' 4	1' 9	0' 4
11	23 40 45' 72	0' 06	0' 13	2 54 28' 9	0' 5	1' 9	0' 4
12	23 40 47' 20	0' 07	0' 13	2 54 16' 6	0' 5	1' 9	0' 4
13	23 40 48' 87	0' 07	0' 13	2 54 3' 2	0' 6	1' 9	0' 4
14	23 40 50' 72	0' 08	0' 13	2 53 48' 5	0' 6	1' 9	0' 4
15	23 40 52' 76	0' 09	0' 13	2 53 39' 8	0' 7	1' 9	0' 4
16	23 40 54' 99	0' 10	0' 13	2 53 15' 4	0' 7	1' 9	0' 4
17	23 40 57' 41	0' 10	0' 13	2 52 57' 0	0' 8	1' 9	0' 4
18	23 41 0' 02	0' 11	0' 13	2 52 37' 4	0' 8	1' 9	0' 4
19	23 41 2' 81	0' 12	0' 13	2 52 16' 7	0' 9	1' 9	0' 4
20	23 41 5' 78	0' 13	0' 13	2 51 54' 8	0' 9	1' 9	0' 4
21	23 41 8' 95	0' 14	0' 12	2 51 31' 7	1' 0	1' 8	0' 4
22	23 41 12' 29	0' 14	0' 12	2 51 7' 5	1' 0	1' 8	0' 4
23	23 41 15' 82	0' 15	0' 12	2 50 42' 0	1' 1	1' 8	0' 4
24	23 41 19' 54	0' 16	0' 12	2 50 15' 3	1' 1	1' 8	0' 4
25	23 41 23' 43	0' 17	0' 12	2 49 47' 5	1' 2	1' 8	0' 4
26	23 41 27' 50	0' 17	0' 12	2 49 18' 5	1' 2	1' 8	0' 4
27	23 41 31' 76	0' 18	0' 12	2 48 48' 3	1' 3	1' 8	0' 4
28	23 41 36' 20	0' 19	0' 12	2 48 17' 0	1' 3	1' 8	0' 4
29	23 41 40' 82	0' 20	0' 12	2 47 44' 5	1' 4	1' 8	0' 4
30	23 41 45' 61	0' 20	0' 12	2 47 10' 8	1' 4	1' 8	0' 4
31	23 41 50' 59	0' 21	0' 12	2 46 36' 1	1' 5	1' 8	0' 4
32	23 41 55' 74	+ 0' 22	0' 12	S. 2 46 0' 3	+ 1' 5	1' 8	0' 4

MEAN PLACES OF 100 PRINCIPAL FIXED STARS,
FOR JANUARY 1, 1842.

Star's Name.	Mag.	Right Ascension.	Annual Var.	Declination.	Annual Va
α ANDROMEDÆ - - -	1	0 0 13 ^h 861 ^m	+ 3 ^s 0713	N.28 13 7 ^h 17 ^m	+20 ^s 055
γ PEGASI (<i>Algenib</i>)	2.3	0 5 6 ^h 399 ^m	3 ^s 0780	N.14 18 18 ^h 92 ^m	20 ^s 051
β Hydri - - - - -	3	0 17 20 ^h 936 ^m	3 ^s 3093*	S.78 8 44 ^h 39 ^m	19 ^s 999
α CASSIOPEÆ - - -	3	0 31 34 ^h 643 ^m	3 ^s 3396	N.55 40 11 ^h 74 ^m	19 ^s 865
β Ceti - - - - -	2.3	0 35 39 ^h 281 ^m	+ 2 ^s 9997	S.18 51 15 ^h 09 ^m	+19 ^s 813
α URS. MIN. (<i>Polaris</i>)	2.3	1 2 43 ^h 788 ^m	16 ^s 7084*	N.88 28 0 ^h 57 ^m	19 ^s 306
θ^1 Ceti - - - - -	3	1 16 7 ^h 656 ^m	3 ^s 0014	S. 8 59 57 ^h 98 ^m	18 ^s 958
α Eridani (<i>Achernar</i>)	1	1 31 49 ^h 354 ^m	2 ^s 2345	S.58 2 28 ^h 20 ^m	18 ^s 467
α ARIETIS - - - - -	3	1 58 16 ^h 711 ^m	+ 3 ^s 3467	N.22 42 44 ^h 30 ^m	+17 ^s 449
γ Ceti - - - - -	3	2 35 7 ^h 220 ^m	3 ^s 1081	N. 2 33 58 ^h 70 ^m	15 ^s 633
α CETI - - - - -	2.3	2 54 1 ^h 597 ^m	3 ^s 1262	N. 3 27 56 ^h 98 ^m	14 ^s 545
α PERSEI - - - - -	2.3	3 13 4 ^h 428 ^m	4 ^s 2305	N.49 17 33 ^h 41 ^m	13 ^s 348
γ Tauri - - - - -	3	3 38 6 ^h 225 ^m	+ 3 ^s 5465	N.23 36 42 ^h 58 ^m	+11 ^s 637
γ^1 Eridani - - - - -	2.3	3 50 39 ^h 592 ^m	2 ^s 7896	S.13 57 41 ^h 62 ^m	10 ^s 726
α TAURI (<i>Aldebaran</i>)	1	4 26 51 ^h 703 ^m	3 ^s 4270	N.16 11 10 ^h 52 ^m	7 ^s 926
α AURIGÆ (<i>Capella</i>)	1	5 5 1 ^h 586 ^m	4 ^s 4075	N.45 49 48 ^h 17 ^m	4 ^s 762
β ORIONIS (<i>Rigel</i>)	1	5 6 56 ^h 849 ^m	+ 2 ^s 8785	S. 8 23 20 ^h 09 ^m	+ 4 ^s 599
β TAURI - - - - -	2	5 16 18 ^h 522 ^m	3 ^s 7824	N.28 28 2 ^h 30 ^m	3 ^s 798
δ ORIONIS - - - - -	2	5 23 56 ^h 225 ^m	3 ^s 0607	S. 0 25 16 ^h 87 ^m	3 ^s 141
α Leporis - - - - -	3.4	5 25 45 ^h 846 ^m	2 ^s 6424	S.17 56 25 ^h 66 ^m	2 ^s 983
ϵ ORIONIS - - - - -	2.3	5 28 11 ^h 940 ^m	+ 3 ^s 0403	S. 1 18 28 ^h 60 ^m	+ 2 ^s 772
α Columbæ - - - - -	2	5 33 55 ^h 855 ^m	2 ^s 1690	S.34 9 42 ^h 86 ^m	2 ^s 275
α ORIONIS - - - - -	1	5 46 37 ^h 196 ^m	3 ^s 2432	N. 7 22 19 ^h 48 ^m	+ 1 ^s 168
μ Geminorum - - - -	3	6 13 24 ^h 069 ^m	3 ^s 6257	N.22 35 20 ^h 02 ^m	- 1 ^s 175
α Argus - (<i>Canopus</i>)	1	6 20 26 ^h 833 ^m	+ 1 ^s 3279	S.52 36 42 ^h 01 ^m	- 1 ^s 788
δ^1 (Hev.) Cephei - -	6	6 24 26 ^h 972 ^m	30 ^s 8487	N.87 15 38 ^h 30 ^m	2 ^s 158
α CANIS MAJ. (<i>Sirius</i>)	1	6 38 11 ^h 209 ^m	2 ^s 6459*	S.16 30 16 ^h 37 ^m	4 ^s 469
ϵ Canis Majoris - - -	2.3	6 52 25 ^h 097 ^m	2 ^s 3557	S.28 45 41 ^h 09 ^m	4 ^s 549
δ Geminorum - - - -	3.4	7 10 41 ^h 010 ^m	+ 3 ^s 5920	N.22 16 1 ^h 03 ^m	- 6 ^s 090
α^1 GEMINOR. (<i>Castor</i>)	3	7 24 30 ^h 699 ^m	3 ^s 8566	N.32 13 41 ^h 45 ^m	7 ^s 232
α CAN. MIN. (<i>Procyon</i>)	1.2	7 31 1 ^h 639 ^m	3 ^s 1446*	N. 5 37 29 ^h 35 ^m	8 ^s 741
β GEMINOR. (<i>Pollux</i>)	2	7 35 38 ^h 408 ^m	3 ^s 6834*	N.28 24 6 ^h 94 ^m	8 ^s 132
δ^1 Argus - - - - -	3.4	8 0 49 ^h 194 ^m	+ 2 ^s 5595	S.23 51 8 ^h 25 ^m	-10 ^s 091
ϵ Hydri - - - - -	4	8 38 24 ^h 417 ^m	3 ^s 1968	N. 6 59 41 ^h 04 ^m	12 ^s 786
ϵ URSÆ MAJ. ORIS - - -	3.4	8 48 21 ^h 519 ^m	4 ^s 1279*	N.48 39 25 ^h 34 ^m	13 ^s 446
ϵ Argus - - - - -	2	9 12 51 ^h 752 ^m	1 ^s 6101	S.58 36 49 ^h 95 ^m	14 ^s 955
ϵ HYDRÆ - - - - -	2	9 19 49 ^h 470 ^m	+ 2 ^s 9499	S. 7 58 35 ^h 55 ^m	-15 ^s 355
δ^1 URSÆ MAJ. ORIS - - -	3	9 22 15 ^h 226 ^m	4 ^s 0527*	N.52 23 35 ^h 38 ^m	16 ^s 093
ϵ Leonis - - - - -	3	9 36 52 ^h 383 ^m	3 ^s 4266	N.24 29 55 ^h 96 ^m	16 ^s 272
ϵ LEONIS (<i>Regulus</i>)	1	9 59 57 ^h 199 ^m	+ 3 ^s 2215	N.12 44 12 ^h 40 ^m	-17 ^s 368

MEAN PLACES OF 100 PRINCIPAL FIXED STARS, FOR JANUARY 1, 1842.

Star's Name.	Mag.	Right Ascension.			Annual Var.	Declination.			Annual Var.	
		^h	^m	^s		^o	ⁱ	["]		
γ Argus - - - - -	2	10	38	57.004	+	2.3043	S. 58	51	19.00	-18.815
α URSAE MAJORIS - -	1.2	10	53	55.448		3.8035	N.62	36	9.07	19.229
β LEONIS - - - - -	3	11	5	41.810		3.1933	N.21	23	21.33	19.496
δ Hydræ et Crateris -	3.4	11	11	26.905		3.0008	S.13	55	27.43	19.608
β LEONIS - - - - -	2.3	11	40	59.834	+	3.0657*	N.15	27	18.21	-19.987
γ URSAE MAJORIS - -	2	11	45	29.445		3.1892	N.54	34	23.15	20.016
β Chamæleontis - -	5	12	9	13.546		3.3341	S.78	26	5.99	20.039
α ¹ Crucis - - - - -	1	12	17	51.839		3.2684	S.62	13	19.77	19.994
β Corvi - - - - -	2.3	12	26	5.970	+	3.1335	S.22	31	15.75	-19.925
α Canum Venaticorum	2.3	12	48	37.764		2.8410	N.39	10	22.96	19.605
α VIRGINIS (<i>Spica</i>)	1	13	16	52.652		3.1507	S.10	20	4.93	18.937
γ URSAE MAJORIS - -	2.3	13	41	18.363		2.3529*	N.50	6	14.02	18.127
γ Bootis - - - - -	3	13	47	9.728	+	2.8606	N.19	11	37.53	-17.902
β Centauri - - - - -	1	13	52	44.205		4.1475	S.59	36	23.24	17.676
α BOOTIS (<i>Arcturus</i>)	1	14	8	27.432		2.7335*	N.20	0	27.15	18.945*
α ² Centauri - - - - -	1	14	28	55.868		4.0130*	S.60	10	36.50	15.132*
ε BOOTIS - - - - -	3	14	38	5.245	+	2.6229	N.27	44	37.77	-15.469
α ² LIBRÆ - - - - -	3	14	42	8.922	+	3.3095	S.15	22	48.73	15.240
β URSAE MINORIS - -	3	14	51	14.406	-	0.2734	N.74	48	3.86	14.713
β Libræ - - - - -	2.3	15	8	30.726	+	3.2221	S. 8	47	42.49	13.643
α CORONÆ BOREALIS	2	15	27	59.922	+	2.5278	N.27	15	0.73	-12.346
α SERPENTIS - - - -	2.3	15	36	29.312	+	2.9389	N. 6	55	39.30	11.752
ζ URSAE MINORIS - -	4	15	49	50.363	-	2.3604	N.78	16	38.55	10.789
β ¹ Scorpii - - - - -	2	15	56	15.522	+	3.4736	S.19	21	59.43	10.308
δ OPHIUCHI - - - -	3	16	6	4.308	+	3.1378	S. 3	16	52.96	- 9.562
α SCORPII (<i>Antares</i>)	1	16	19	43.817		3.6632	S.26	4	30.03	8.495
γ Draconis - - - - -	3	16	21	51.677		0.7952	N.61	52	22.89	8.327
α Trianguli Australis	2	16	32	0.065	+	6.2549	S.68	43	34.77	7.509
ε URSAE MINORIS - -	4	17	2	22.148	-	6.5445*	N.82	17	12.39	- 4.994
α HERCULIS - - - -	3.4	17	7	26.760	+	2.7319	N.14	34	32.31	4.557
σ Octantis - - - - -	6	17	15	50.496		105.6699	S.89	15	56.14	3.760
β DRACONIS - - - -	2	17	26	51.999		1.3511	N.52	25	14.99	2.888
α OPHIUCHI - - - -	2	17	27	36.1			N.12	40	53.00	- 2.824
γ DRACONIS - - - -	2	17	52	56.7			51	30	35.84	- 0.617
μ ¹ Sagittarii - - - -	3.4	18	4	18.1			1	5	32.84	+ 0.380
δ URSAE MINORIS - -	3	18	23	17.1			5	35	32.93	+ 2.021
α LYRÆ - - (<i>Vega</i>)	1	18	37	1.1			38	22	80.0	+ 2.757
β LYRÆ - - - - -	3	18	37	1.1			11	0	0.05	3.850
ζ AQUILÆ - - - - -	3	18	37	1.1			18	3	23.0	5.036
δ AQUILÆ - - - - -	3.4	18	37	1.1			3	18	37.0	+ 6.658

MEAN PLACES OF 100 PRINCIPAL FIXED STARS,
FOR JANUARY 1, 1842.

Star's Name.	Mag.	Right Ascension.			Annual Var.	Declination.			Annual Var.
		^h	^m	^s		^o	[']	["]	
γ AQUILÆ - - - - -	3	19	38	44.834	+ 2.8511	N.10	13	59.65	+ 8.378
α AQUILÆ - (<i>Altair</i>)	1.2	19	43	4.417	2.9254*	N. 8	27	18.81	8.720
β AQUILÆ - - - - -	3.4	19	47	33.108	2.9447	N. 6	1	1.49	8.532
α^2 CAPRICORNI - - -	3	20	9	16.959	3.3319	S.13	1	44.12	10.725
α PAVONIS - - - - -	2	20	13	6.589	+ 4.8069	S.57	14	3.57	+11.907
λ URSE MINORIS - - -	5	20	19	57.213	-50.9635	N.88	50	7.54	11.471
α CYGNI - - - - -	1	20	36	2.879	+ 2.0417	N.44	43	5.11	12.626
β CYGNI - - - - -	5.6	20	59	49.255	2.6907*	N.37	58	35.03	17.467
ζ Cygni - - - - -	3	21	6	12.929	+ 2.5485	N.29	34	56.65	+14.562
α CEPHEI - - - - -	3	21	14	48.094	1.4166	N.61	55	3.11	15.068
β AQUARI - - - - -	3	21	23	14.243	3.1631	S. 6	15	44.58	15.545
β CEPHEI - - - - -	3	21	26	35.823	0.8073	N.69	52	4.69	15.728
ϵ Pegasi - - - - -	2.3	21	36	25.610	+ 2.9441	N. 9	9	14.29	+16.248
α AQUARI - - - - -	3	21	57	40.023	3.0833	S. 1	5	3.47	17.267
α GRUIS - - - - -	2	21	58	14.579	3.8152	S.47	43	21.60	17.293
ζ Pegasi - - - - -	3	22	33	34.971	2.9836	N.10	0	31.15	18.647
α PIS. AUR. (<i>Fomalhaut</i>)	1	22	48	54.335	+ 3.3103	S.30	27	28.03	+19.099
α PEGASI (<i>Markab</i>)	2	22	56	53.666	2.9774	N.14	21	22.68	19.301
ϵ PISCIIUM - - - - -	4.5	23	31	49.379	3.0568	N. 4	46	13.62	19.354
γ Cephei - - - - -	3	23	32	55.251	+ 2.4013	N.76	45	1.67	+19.916

Those Annual Variations which include proper motion are distinguished by an Asterisk.

FORMULÆ OF REDUCTION,

ACCORDING TO PROFESSOR BESSEL.

1.—*Adopting the Notation and Coefficients employed by Mr. Baily, in his Introduction to the New Tables of the Astronomical Society of London.*

$$A = -18^{\text{N}}.6768 \cos \odot$$

$$B = -20^{\text{N}}.3600 \sin \odot$$

$$C = t - 0.02495 \sin 2 \odot - 0.34362 \sin \Omega + 0.06413 \sin 2 \Omega - 0.004 \sin 2 \zeta$$

$$D = -0.54470 \cos 2 \odot - 9^{\text{N}}.25000 \cos \Omega + 0.09030 \cos 2 \Omega - 0.090 \cos 2 \zeta$$

$$a = \cos \alpha \sec \delta$$

$$b = \sin \alpha \sec \delta$$

$$c = 46^{\text{N}}.0206 + 20^{\text{N}}.0426 \sin \alpha \tan \delta$$

$$d = \cos \alpha \tan \delta$$

$$a' = \tan \omega \cos \delta - \sin \alpha \sin \delta$$

$$b' = \cos \alpha \sin \delta$$

$$c' = 20^{\text{N}}.0426 \cos \alpha$$

$$d' = -\sin \alpha$$

Δc = the annual proper motion in Right Ascension, *in arc*.

$\Delta c'$ = the annual proper motion in Declination.

Where t denotes the time from the beginning of the year, expressed in fractional parts of a year, \odot the Sun's and ζ the Moon's true longitude, Ω the mean longitude of the Moon's node, and ω the obliquity of the Ecliptic, each for the time t : α the mean Right Ascension, *in arc*, and δ the mean Declination for the beginning of the year. Then, for the time represented by t ,

$$\text{Apparent R.A., in arc,} = \alpha + A a + B b + C c + D d + t \Delta c.$$

$$\text{Apparent Dec.} \quad \quad \quad = \delta + A a' + B b' + C c' + D d' + t \Delta c'.$$

2.—*Using the same Notation and Coefficients, and assuming*

$$46^{\text{N}}.0206 C = f$$

$$B = h \cos H$$

$$20^{\text{N}}.0426 C = g \cos G$$

$$A = h \sin H$$

$$D = g \sin G$$

$$A \tan \omega = i$$

$$\text{Apparent R.A., in arc,} = \alpha + f + t \Delta c$$

$$+ g \sin (G + \alpha) \tan \delta + h \sin (H + \alpha)$$

$$\text{Apparent Dec.} \quad \quad \quad = \delta + i \cos \delta + t \Delta c'$$

$$+ g \cos (G + \alpha) + h \cos (H + \alpha) \sin \delta$$

CONSTANTS FOR FACILITATING THE REDUCTION OF STARS.

Day of the Month.	At Greenwich Mean Midnight.					
	<i>f</i>	<i>g</i>	<i>G</i>	<i>h</i>	<i>H</i>	<i>i</i>
Jan. 1	+13 ^{''} ·91	+7 ^{''} ·42	324 43	+20 ^{''} ·30	349 39	-- 1 ^{''} ·58
6	14 ^{''} ·76	7 ^{''} ·73	326 15	20 ^{''} ·23	344 56	2 ^{''} ·28
11	15 ^{''} ·59	8 ^{''} ·05	327 32	20 ^{''} ·14	340 11	2 ^{''} ·96
16	16 ^{''} ·39	8 ^{''} ·36	328 37	20 ^{''} ·03	335 23	3 ^{''} ·62
21	+17 ^{''} ·16	+8 ^{''} ·67	329 32	+19 ^{''} ·91	330 32	-- 4 ^{''} ·25
26	17 ^{''} ·90	8 ^{''} ·98	330 17	19 ^{''} ·78	325 38	4 ^{''} ·85
31	18 ^{''} ·61	9 ^{''} ·28	330 55	19 ^{''} ·63	320 40	5 ^{''} ·40
Feb. 5	19 ^{''} ·29	9 ^{''} ·56	331 27	19 ^{''} ·48	315 37	5 ^{''} ·91
10	+19 ^{''} ·92	+9 ^{''} ·83	331 55	+19 ^{''} ·33	310 30	-- 6 ^{''} ·38
15	20 ^{''} ·52	10 ^{''} ·09	332 21	19 ^{''} ·19	305 20	6 ^{''} ·80
20	21 ^{''} ·09	10 ^{''} ·33	332 46	19 ^{''} ·06	300 6	7 ^{''} ·16
25	21 ^{''} ·63	10 ^{''} ·56	333 10	18 ^{''} ·94	294 48	7 ^{''} ·46
Mar. 2	+22 ^{''} ·14	+10 ^{''} ·77	333 35	+18 ^{''} ·84	289 27	-- 7 ^{''} ·71
7	22 ^{''} ·63	10 ^{''} ·97	334 2	18 ^{''} ·76	284 4	7 ^{''} ·90
12	23 ^{''} ·11	11 ^{''} ·15	334 31	18 ^{''} ·70	278 40	8 ^{''} ·03
17	23 ^{''} ·58	11 ^{''} ·33	335 3	18 ^{''} ·68	273 16	8 ^{''} ·10
22	+24 ^{''} ·05	+11 ^{''} ·50	335 38	+18 ^{''} ·68	267 51	-- 8 ^{''} ·11
27	24 ^{''} ·51	11 ^{''} ·66	336 17	18 ^{''} ·70	262 28	8 ^{''} ·05
April 1	24 ^{''} ·99	11 ^{''} ·83	336 59	18 ^{''} ·75	257 7	7 ^{''} ·93
6	25 ^{''} ·48	11 ^{''} ·99	337 45	18 ^{''} ·82	251 49	7 ^{''} ·76
11	+25 ^{''} ·99	+12 ^{''} ·16	338 34	+18 ^{''} ·91	246 35	-- 7 ^{''} ·53
16	26 ^{''} ·52	12 ^{''} ·34	339 25	19 ^{''} ·02	241 25	7 ^{''} ·25
21	27 ^{''} ·08	12 ^{''} ·53	340 18	19 ^{''} ·15	236 19	6 ^{''} ·92
26	27 ^{''} ·67	12 ^{''} ·73	341 13	19 ^{''} ·28	231 19	6 ^{''} ·53
May 1	+28 ^{''} ·29	+12 ^{''} ·94	342 8	+19 ^{''} ·42	226 23	-- 6 ^{''} ·10
6	28 ^{''} ·94	13 ^{''} ·17	343 8	19 ^{''} ·57	221 33	5 ^{''} ·63
11	29 ^{''} ·62	13 ^{''} ·42	343 57	19 ^{''} ·71	216 47	5 ^{''} ·12
16	30 ^{''} ·34	13 ^{''} ·69	344 49	19 ^{''} ·84	212 6	4 ^{''} ·57
21	+31 ^{''} ·09	+13 ^{''} ·97	345 39	+19 ^{''} ·96	207 29	-- 3 ^{''} ·99
26	31 ^{''} ·86	14 ^{''} ·27	346 25	20 ^{''} ·07	202 56	3 ^{''} ·39
31	32 ^{''} ·65	14 ^{''} ·59	347 8	20 ^{''} ·17	198 26	2 ^{''} ·77
June 5	33 ^{''} ·47	14 ^{''} ·91	347 47	20 ^{''} ·25	193 58	2 ^{''} ·12
10	+34 ^{''} ·30	+15 ^{''} ·25	348 21	+20 ^{''} ·31	189 32	-- 1 ^{''} ·46
15	35 ^{''} ·14	15 ^{''} ·60	348 51	20 ^{''} ·35	185 9	0 ^{''} ·79
20	35 ^{''} ·99	15 ^{''} ·95	349 17	20 ^{''} ·36	180 47	-- 0 ^{''} ·12
25	36 ^{''} ·84	16 ^{''} ·31	349 39	20 ^{''} ·35	176 24	+ 0 ^{''} ·55
30	37 ^{''} ·69	16 ^{''} ·67	349 56	20 ^{''} ·32	172 1	1 ^{''} ·22
July 5	+38 ^{''} ·52	+17 ^{''} ·03	350 10	+20 ^{''} ·27	167 37	+ 1 ^{''} ·89

CONSTANTS FOR FACILITATING THE REDUCTION OF STARS.

Day of the Month.		At Greenwich Mean Midnight.					
		<i>f</i>	<i>g</i>	<i>G</i>	<i>h</i>	<i>H</i>	<i>i</i>
July	5	+38 ["] 52	+17 ["] 03	350 10 [°]	+20 ["] 27	167 37 [°]	+ 1 ["] 89
	10	39 34	17 38	350 21	20 20	163 12	2 54
	15	40 14	17 73	350 28	20 11	158 44	3 17
	20	40 92	18 07	350 33	20 01	154 13	3 78
	25	+41 67	+18 40	350 36	+19 89	149 40	+ 4 36
Aug.	30	42 39	18 72	350 37	19 76	145 2	4 91
	4	43 08	19 02	350 37	19 62	140 20	5 43
	9	43 74	19 31	350 36	19 48	135 34	5 92
	14	+44 37	+19 59	350 35	+19 34	130 43	+ 6 36
	19	44 97	19 85	350 35	19 21	125 48	6 76
Sept.	24	45 53	20 10	350 35	19 08	120 48	7 11
	29	46 06	20 34	350 36	18 96	115 43	7 41
	3	+46 58	+20 56	350 38	+18 86	110 34	+ 7 66
	8	47 07	20 77	350 42	18 78	105 21	7 86
	13	47 54	20 97	350 48	18 72	100 5	8 00
Oct.	18	48 00	21 17	350 56	18 69	94 46	8 08
	23	+48 46	+21 36	351 7	+18 68	89 26	+ 8 11
	28	48 92	21 55	351 20	18 69	84 6	8 07
	3	49 38	21 74	351 35	18 73	78 45	7 97
	8	49 86	21 93	351 52	18 80	73 25	7 82
Nov.	13	+50 35	+22 13	352 12	+18 89	68 6	+ 7 61
	18	50 86	22 34	352 33	18 99	62 50	7 34
	23	51 39	22 55	352 55	19 11	57 38	7 01
	28	51 96	22 78	353 18	19 25	52 28	6 63
	2	+52 56	+23 03	353 43	+19 40	47 22	+ 6 20
Dec.	7	53 20	23 29	354 8	19 55	42 20	5 71
	12	53 87	23 57	354 32	19 69	37 21	5 18
	17	54 57	23 86	354 55	19 83	32 27	4 61
	22	+55 30	+24 17	355 17	+19 96	27 36	+ 4 01
	27	56 07	24 49	355 38	20 08	22 48	3 38
31	2	56 87	24 83	355 57	20 18		2 71
	7	57 68	25 18	356 13	20 2		2 02
	12	+58 51	+25 54	356 27	+20 3		+ 1 32
	17	59 36	25 90	356 38	20 3		+ 0 60
	22	60 21	26 26	356 47	20 3		- 0
32	27	61 06	26 63	356 54	20 3		0
	32	+61 90	+27 00	356 58	+20 3		- 1

APPARENT PLACES OF α AND δ URSAE MINORIS,
FOR THE UPPER TRANSIT AT GREENWICH.

JANUARY.					FEBRUARY.				
Day of the Month.	α URSAE MINOR. (Polaris)		δ URSAE MINOR.		Day of the Month.	α URSAE MINOR. (Polaris)		δ URSAE MINOR.	
	R. A.	Dec. N.	R. A.	Dec. N.		R. A.	Dec. N.	R. A.	Dec.
	^h 1 ^m 2	^o 88 ['] 28	^h 18 ^m 22	^o 86 ['] 35		^h 1 ^m 2	^o 88 ['] 28	^h 18 ^m 22	^o 86 ['] 35
1	43 ^s 47	27 ["] 7	48 ^s 95	27 ["] 4	1	19 ^s 57	27 ["] 4	51 ^s 59	17 ["] 7
2	42 69	27 7	48 92	27 1	2	18 85	27 3	51 78	17 7
3	41 91	27 8	48 90	26 7	3	18 13	27 1	51 97	17 7
4	41 13	27 9	48 90	26 4	4	17 42	27 0	52 18	17 7
5	40 35	27 9	48 90	26 0	5	16 71	26 9	52 40	16 7
6	39 57	28 0	48 91	25 7	6	16 01	26 7	52 62	16 7
7	38 78	28 1	48 94	25 4	7	15 32	26 6	52 84	16 7
8	38 00	28 1	48 97	25 1	8	14 64	26 4	53 07	15 7
9	37 22	28 2	49 00	24 8	9	13 98	26 3	53 30	15 7
10	36 43	28 3	49 03	24 5	10	13 32	26 2	53 53	15 7
11	35 65	28 3	49 07	24 1	11	12 66	26 0	53 77	15 7
12	34 87	28 3	49 12	23 8	12	12 01	25 8	54 02	14 7
13	34 08	28 3	49 17	23 5	13	11 37	25 7	54 28	14 7
14	33 30	28 3	49 23	23 2	14	10 74	25 5	54 54	14 7
15	32 52	28 3	49 31	22 9	15	10 11	25 3	54 81	14 7
16	31 74	28 3	49 39	22 5	16	9 49	25 1	55 08	14 7
17	30 96	28 3	49 48	22 2	17	8 88	24 9	55 35	13 7
18	30 18	28 3	49 58	21 8	18	8 28	24 7	55 62	13 6
19	29 40	28 3	49 68	21 5	19	7 70	24 5	55 90	13 4
20	28 62	28 3	49 78	21 2	20	7 13	24 3	56 19	13 3
21	27 84	28 2	49 89	20 9	21	6 58	24 0	56 48	13 2
22	27 07	28 2	50 00	20 6	22	6 04	23 8	56 77	13 0
23	26 30	28 2	50 13	20 3	23	5 50	23 6	57 07	12 7
24	25 54	28 1	50 27	20 0	24	4 97	23 4	57 37	12 5
25	24 78	28 0	50 42	19 7	25	4 46	23 2	57 68	12 3
26	24 02	28 0	50 58	19 4	26	3 96	22 9	57 99	12 1
27	23 27	27 9	50 74	19 1	27	3 46	22 6	58 30	12 0
28					28	2 98	22 3	58 62	11 8
29	22 52	27 8	50 90	18 9					
29	21 77	27 7	51 07	18 6	29	2 53	22 1	58 94	11 7
30	21 03	27 6	51 24	18 3					
31	20 30	27 5	51 41	18 0					
32	19 57	27 4	51 59	17 7					

APPARENT PLACES OF α AND δ URSE MINORIS, FOR THE UPPER TRANSIT AT GREENWICH.

MARCH.					APRIL.				
Day of the Month.	α URSE MINOR. (Polaris)		δ URSE MINOR.		Day of the Month.	α URSE MINOR. (Polaris)		δ URSE MINOR.	
	R. A.	Dec. N.	R. A.	Dec. N.		R. A.	Dec. N.	R. A.	Dec. N.
	1 ^h 1 ^m	88° 28'	18 ^h 22 ^m	86° 35'		1 ^h 1 ^m	88° 28'	18 ^h 23 ^m	86° 35'
1	62° 53'	22° 1'	58° 94'	11° 7'	1	55° 04'	13° 2'	9° 69'	10° 4'
2	62° 09'	21° 9'	59° 26'	11° 6'	2	55° 05'	12° 9'	10° 04'	10° 4'
3	61° 65'	21° 7'	59° 58'	11° 5'	3	55° 07'	12° 6'	10° 39'	10° 5'
4	61° 22'	21° 4'	59° 91'	11° 4'	4	55° 10'	12° 2'	10° 74'	10° 6'
5	60° 80'	21° 1'	60° 24'	11° 2'	5	55° 14'	11° 9'	11° 08'	10° 6'
6	60° 40'	20° 9'	60° 57'	11° 1'	6	55° 20'	11° 6'	11° 43'	10° 7'
7	60° 01'	20° 6'	60° 91'	11° 0'	7	{55° 22'}	{11° 3'}	11° 77'	10° 8'
8	59° 64'	20° 3'	61° 25'	10° 9'	8	55° 43'	10° 7'	12° 11'	10° 9'
9	59° 28'	20° 1'	61° 59'	10° 8'	9	55° 55'	10° 4'	12° 44'	11° 0'
10	58° 94'	19° 8'	61° 94'	10° 7'	10	55° 69'	10° 1'	12° 77'	11° 1'
11	58° 61'	19° 5'	62° 29'	10° 7'	11	55° 85'	9° 8'	13° 11'	11° 2'
12	58° 29'	19° 2'	62° 63'	10° 6'	12	56° 02'	9° 3'	13° 44'	11° 3'
13	57° 99'	18° 9'	62° 97'	10° 5'	13	56° 19'	9° 2'	13° 77'	11° 4'
14	57° 70'	18° 6'	63° 32'	10° 4'	14	56° 38'	8° 9'	14° 09'	11° 5'
15	57° 42'	18° 3'	63° 67'	10° 3'	15	56° 59'	8° 6'	14° 41'	11° 7'
16	57° 16'	18° 0'	64° 02'	10° 3'	16	56° 81'	8° 3'	14° 79'	11° 9'
17	56° 92'	17° 7'	64° 38'	10° 3'	17	57° 05'	8° 0'	15° 04'	12° 0'
18	56° 69'	17° 4'	64° 73'	10° 2'	18	57° 30'	7° 7'	15° 35'	12° 1'
19	56° 47'	17° 1'	65° 09'	10° 2'	19	57° 58'	7° 4'	15° 66'	12° 3'
20	56° 27'	16° 8'	65° 45'	10° 2'	20	57° 87'	7° 1'	15° 97'	12° 4'
21	56° 08'	16° 5'	65° 80'	10° 2'	21	58° 17'	6° 8'	16° 28'	12° 6'
22	55° 91'	16° 2'	66° 15'	10° 2'	22	58° 47'	6° 6'	16° 58'	12° 8'
23	55° 76'	15° 9'	66° 51'	10° 2'	23	58° 79'	6° 3'	16° 88'	12° 9'
24	55° 62'	15° 6'	66° 86'	10° 2'	24	59° 12'	6° 0'	17° 17'	13° 1'
25	55° 49'	15° 3'	67° 22'	10° 2'	25	59° 46'	5° 7'	17° 46'	13° 3'
26	55° 37'	15° 0'	67° 58'	10° 2'	26	59° 8'	5° 4'	17° 74'	13° 5'
27	55° 28'	14° 7'	67° 93'	10° 2'	27	60°	5° 1'	17° 02'	13° 7'
28	55° 20'	14° 4'	68° 28'	10° 3'	28	60°	4° 4'	16° 29'	13° 9'
29	55° 14'	14° 1'	68° 63'	10° 3'	29	60°	4° 1'	15° 56'	14°
30	55° 09'	13° 8'	68° 98'	10° 3'	30	60°	3° 4'	15° 83'	14°
31	55° 06'	13° 5'	69° 33'	10° 4'	31	60°	3° 1'	15° 09'	14°

APPARENT PLACES OF α AND δ URSAE MINORIS,
FOR THE UPPER TRANSIT AT GREENWICH.

MAY.					JUNE.				
Day of the Month.	α URSAE MINOR. (Polaris)		δ URSAE MINOR.		Day of the Month.	α URSAE MINOR. (Polaris)		δ URSAE MINOR.	
	R. A.	Dec. N.	R. A.	Dec. N.		R. A.	Dec. N.	R. A.	Dec. N.
	^h 1 ^m 2	^o 88 ['] 27	^h 18 ^m 23	^o 86 ['] 35		^h 1 ^m 2	^o 88 ['] 27	^h 18 ^m 23	^o 86 ['] 35
1	1 ^h 84 ^m	61 ^o 2 [']	19 ^h 09 ^m	14 ^o 6 [']	1	20 ^h 55 ^m	58 ^o 2 [']	24 ^h 69 ^m	22 ^o 9 [']
2	2 ^h 29 ^m	64 ^o 0 [']	19 ^h 35 ^m	14 ^o 8 [']	2	21 ^h 29 ^m	58 ^o 1 [']	24 ^h 78 ^m	23 ^o 3 [']
3	2 ^h 75 ^m	63 ^o 7 [']	19 ^h 61 ^m	15 ^o 0 [']	3	22 ^h 03 ^m	58 ^o 0 [']	24 ^h 87 ^m	23 ^o 7 [']
4	3 ^h 21 ^m	63 ^o 4 [']	19 ^h 87 ^m	15 ^o 2 [']	4	22 ^h 78 ^m	57 ^o 9 [']	24 ^h 95 ^m	23 ^o 9 [']
5	3 ^h 69 ^m	63 ^o 1 [']	20 ^h 12 ^m	15 ^o 4 [']	5	23 ^h 53 ^m	57 ^o 8 [']	25 ^h 02 ^m	24 ^o 2 [']
6	4 ^h 18 ^m	62 ^o 9 [']	20 ^h 36 ^m	15 ^o 7 [']	6	24 ^h 29 ^m	57 ^o 7 [']	25 ^h 09 ^m	24 ^o 6 [']
7	4 ^h 68 ^m	62 ^o 7 [']	20 ^h 59 ^m	16 ^o 0 [']	7	25 ^h 06 ^m	57 ^o 6 [']	25 ^h 14 ^m	25 ^o 0 [']
8	5 ^h 20 ^m	62 ^o 5 [']	20 ^h 82 ^m	16 ^o 2 [']	8	25 ^h 85 ^m	57 ^o 5 [']	25 ^h 19 ^m	25 ^o 3 [']
9	5 ^h 72 ^m	62 ^o 3 [']	21 ^h 04 ^m	16 ^o 5 [']	9	26 ^h 64 ^m	57 ^o 5 [']	25 ^h 23 ^m	25 ^o 6 [']
10	6 ^h 25 ^m	62 ^o 0 [']	21 ^h 26 ^m	16 ^o 7 [']	10	27 ^h 43 ^m	57 ^o 4 [']	25 ^h 27 ^m	26 ^o 0 [']
11	6 ^h 80 ^m	61 ^o 8 [']	21 ^h 48 ^m	16 ^o 9 [']	11	28 ^h 22 ^m	57 ^o 4 [']	25 ^h 30 ^m	26 ^o 3 [']
12	7 ^h 36 ^m	61 ^o 6 [']	21 ^h 69 ^m	17 ^o 2 [']	12	29 ^h 02 ^m	57 ^o 3 [']	25 ^h 32 ^m	26 ^o 6 [']
13	7 ^h 94 ^m	61 ^o 3 [']	21 ^h 90 ^m	17 ^o 5 [']	13	29 ^h 82 ^m	57 ^o 2 [']	25 ^h 33 ^m	26 ^o 9 [']
14	8 ^h 52 ^m	61 ^o 1 [']	22 ^h 10 ^m	17 ^o 7 [']	14	30 ^h 62 ^m	57 ^o 1 [']	25 ^h 34 ^m	27 ^o 2 [']
15	9 ^h 12 ^m	60 ^o 9 [']	22 ^h 29 ^m	18 ^o 0 [']	15	31 ^h 43 ^m	57 ^o 1 [']	25 ^h 35 ^m	27 ^o 6 [']
16	9 ^h 72 ^m	60 ^o 8 [']	22 ^h 47 ^m	18 ^o 3 [']	16	32 ^h 24 ^m	57 ^o 1 [']	25 ^h 35 ^m	27 ^o 9 [']
17	10 ^h 33 ^m	60 ^o 6 [']	22 ^h 65 ^m	18 ^o 5 [']	17	33 ^h 05 ^m	57 ^o 0 [']	25 ^h 34 ^m	28 ^o 2 [']
18	10 ^h 95 ^m	60 ^o 4 [']	22 ^h 83 ^m	18 ^o 8 [']	18	33 ^h 86 ^m	57 ^o 0 [']	25 ^h 33 ^m	28 ^o 6 [']
19	11 ^h 57 ^m	60 ^o 2 [']	23 ^h 00 ^m	19 ^o 1 [']	19	34 ^h 68 ^m	57 ^o 0 [']	25 ^h 31 ^m	28 ^o 9 [']
20	12 ^h 21 ^m	60 ^o 0 [']	23 ^h 17 ^m	19 ^o 4 [']	20	35 ^h 50 ^m	56 ^o 9 [']	25 ^h 28 ^m	29 ^o 2 [']
21	12 ^h 86 ^m	59 ^o 8 [']	23 ^h 33 ^m	19 ^o 7 [']	21	36 ^h 33 ^m	56 ^o 9 [']	25 ^h 24 ^m	29 ^o 6 [']
22	13 ^h 52 ^m	59 ^o 7 [']	23 ^h 49 ^m	20 ^o 0 [']	22	37 ^h 16 ^m	56 ^o 9 [']	25 ^h 20 ^m	29 ^o 9 [']
23	14 ^h 19 ^m	59 ^o 6 [']	23 ^h 65 ^m	20 ^o 3 [']	23	37 ^h 98 ^m	56 ^o 9 [']	25 ^h 16 ^m	30 ^o 3 [']
24	14 ^h 87 ^m	59 ^o 4 [']	23 ^h 79 ^m	20 ^o 6 [']	24	38 ^h 81 ^m	56 ^o 9 [']	25 ^h 11 ^m	30 ^o 6 [']
25	15 ^h 56 ^m	59 ^o 2 [']	23 ^h 93 ^m	20 ^o 9 [']	25	39 ^h 64 ^m	56 ^o 9 [']	25 ^h 05 ^m	30 ^o 9 [']
26	16 ^h 25 ^m	59 ^o 0 [']	24 ^h 06 ^m	21 ^o 2 [']	26	40 ^h 47 ^m	57 ^o 0 [']	24 ^h 99 ^m	31 ^o 3 [']
27	16 ^h 95 ^m	58 ^o 8 [']	24 ^h 18 ^m	21 ^o 5 [']	27	41 ^h 31 ^m	57 ^o 0 [']	24 ^h 92 ^m	31 ^o 6 [']
28	17 ^h 6 ^m	58 ^o 7 [']	24 ^h 29 ^m	21 ^o 8 [']	28	42 ^h 15 ^m	57 ^o 0 [']	24 ^h 84 ^m	31 ^o 9 [']
29	18 ^h 37 ^m	58 ^o 6 [']	24 ^h 40 ^m	22 ^o 1 [']	29	42 ^h 99 ^m	57 ^o 1 [']	24 ^h 76 ^m	32 ^o 2 [']
30	19 ^h 09 ^m	58 ^o 5 [']	24 ^h 50 ^m	22 ^o 4 [']	30	43 ^h 83 ^m	57 ^o 1 [']	24 ^h 68 ^m	32 ^o 5 [']
31	19 ^h 82 ^m	58 ^o 3 [']	24 ^h 60 ^m	22 ^o 7 [']	31	44 ^h 66 ^m	57 ^o 1 [']	24 ^h 59 ^m	32 ^o 8 [']
12	20 ^h 55 ^m	58 ^o 2 [']	24 ^h 69 ^m	22 ^o 9 [']					

APPARENT PLACES OF α AND δ URSE MINORIS, FOR THE UPPER TRANSIT AT GREENWICH.

JULY.					AUGUST.				
Day of the Month.	α URSE MINOR. (Polaris)		δ URSE MINOR.		Day of the Month.	α URSE MINOR. (Polaris)		δ URSE MINOR.	
	R. A.	Dec. N.	R. A.	Dec. N.		R. A.	Dec. N.	R. A.	Dec. N.
	^h 1 ^m 2	^o 88 ['] 27	^h 18 ^m 23	^o 86 ['] 35		^h 1 ^m 3	^o 88 ['] 28	^h 18 ^m 23	^o 86 ['] 35
1	44 ^s 66	57 ["] 1	24 ^s 59	32 ["] 8	1	9 ^s 73	1 ["] 1	18 ^s 75	42 ["] 2
2	45 50	57 2	24 49	33 1	2	10 49	1 3	18 48	42 4
3	46 33	57 2	24 38	33 5	3	11 23	1 5	18 20	42 7
4	47 16	57 2	24 27	33 8	4	11 97	1 7	17 92	43 0
5	48 00	57 3	24 15	34 1	5	12 70	2 0	17 63	43 2
6	48 84	57 4	24 02	34 5	6	13 42	2 2	17 33	43 4
7	49 69	57 5	23 88	34 8	7	14 14	2 4	17 03	43 7
8	50 53	57 6	23 74	35 1	8	14 85	2 7	16 73	44 0
9	51 37	57 7	23 60	35 4	9	15 55	2 9	16 43	44 2
10	52 20	57 7	23 45	35 7	10	16 25	3 1	16 12	44 4
11	53 03	57 8	23 30	36 1	11	16 94	3 4	15 81	44 6
12	53 85	57 9	23 14	36 4	12	17 62	3 6	15 49	44 8
13	54 68	58 0	22 97	36 7	13	18 30	3 8	15 17	45 1
14	55 50	58 1	22 80	37 0	14	18 98	4 1	14 84	45 3
15	56 32	58 3	22 62	37 3	15	19 65	4 4	14 51	45 5
16	57 14	58 4	22 44	37 6	16	20 30	4 7	14 18	45 8
17	57 96	58 6	22 25	37 9	17	20 95	5 0	13 84	46 0
18	58 78	58 7	22 06	38 2	18	21 58	5 3	13 50	46 2
19	59 59	58 8	21 86	38 5	19	22 21	5 6	13 16	46 4
20	60 40	59 0	21 65	38 8	20	22 84	5 8	12 81	46 6
21	61 21	59 1	21 44	39 1	21	23 46	6 1	12 45	46 8
22	62 00	59 2	21 22	39 4	22	24 07	6 4	12 09	47 0
23	62 79	59 4	21 00	39 7	23	24 67	6 7	11 73	47 2
24	63 58	59 6	20 77	40 0	24	25 26	7 0	11 37	47 4
25	64 36	59 7	20 53	40 3	25	25 84	7 3	11 00	47 6
26	65 14	59 9	20 29	40 5	26	26 42	7 6	10 63	47 7
27	65 91	60 1	20 05	40 8	27	26 98	7 9	10 26	47 9
28	66 68	60 3	19 80	41 1	28	27 53	8 2	9 89	48 1
29	67 44	60 5	19 55	41 4	29	28 08	8 5	9 51	48 2
30	68 20	60 7	19 29	41 6	30	28 61	8 8	9 13	48 3
31	68 97	60 9	19 02	41 9	31	29 14	9 1	8 75	48 4
32	69 73	61 1	18 75	42 2	32	29 67	9 4	8 36	48 5

APPARENT PLACES OF α AND δ URSAE MINORIS,
FOR THE UPPER TRANSIT AT GREENWICH.

SEPTEMBER.					OCTOBER.				
Day of the Month.	α URSAE MINOR. (Polaris)		δ URSAE MINOR.		Day of the Month.	α URSAE MINOR. (Polaris)		δ URSAE MINOR.	
	R. A.	Dec. N.	R. A.	Dec. N.		R. A.	Dec. N.	R. A.	Dec. N.
	^h 1 ^m 3	^o 88 ['] 28	^h 18 ^m 22	^o 86 ['] 35		^h 1 ^m 3	^o 88 ['] 28	^h 18 ^m 22	^o 86 ['] 35
1	29 ^s 66	9 ^s 4	68 ^s 36	48 ^s 7	1	40 ^s 37	20 ^s 1	55 ^s 94	51 ^s 7
2	30 ^s 17	9 ^s 7	67 ^s 97	48 ^s 9	2	40 ^s 55	20 ^s 5	55 ^s 52	51 ^s 7
3	30 ^s 68	10 ^s 1	67 ^s 58	49 ^s 0	3	40 ^s 72	20 ^s 9	55 ^s 09	51 ^s 7
4	31 ^s 18	10 ^s 4	67 ^s 19	49 ^s 1	4	40 ^s 89	21 ^s 3	54 ^s 66	51 ^s 7
5	31 ^s 66	10 ^s 6	66 ^s 80	49 ^s 3	5	41 ^s 04	21 ^s 6	54 ^s 23	51 ^s 7
6	32 ^s 12	11 ^s 0	66 ^s 40	49 ^s 4	6	41 ^s 17	22 ^s 0	53 ^s 80	51 ^s 7
7	32 ^s 56	11 ^s 4	66 ^s 00	49 ^s 5	7	41 ^s 29	22 ^s 4	53 ^s 37	51 ^s 7
8	33 ^s 00	11 ^s 7	65 ^s 59	49 ^s 6	8	41 ^s 40	22 ^s 8	52 ^s 95	51 ^s 7
9	33 ^s 44	12 ^s 1	65 ^s 19	49 ^s 7	9	41 ^s 50	23 ^s 2	52 ^s 53	50 ^s 9
10	33 ^s 87	12 ^s 5	64 ^s 78	49 ^s 8	10	41 ^s 58	23 ^s 6	52 ^s 10	50 ^s 9
11	34 ^s 29	12 ^s 9	64 ^s 37	49 ^s 9	11	41 ^s 65	23 ^s 9	51 ^s 68	50 ^s 9
12	34 ^s 70	13 ^s 2	63 ^s 96	50 ^s 0	12	41 ^s 71	24 ^s 3	51 ^s 26	50 ^s 8
13	35 ^s 11	13 ^s 5	63 ^s 54	50 ^s 1	13	41 ^s 77	24 ^s 7	50 ^s 84	50 ^s 7
14	35 ^s 50	13 ^s 8	63 ^s 12	50 ^s 2	14	41 ^s 81	25 ^s 1	50 ^s 42	50 ^s 7
15	35 ^s 87	14 ^s 2	62 ^s 71	50 ^s 3	15	41 ^s 83	25 ^s 5	50 ^s 00	50 ^s 6
16	36 ^s 23	14 ^s 6	62 ^s 29	50 ^s 4	16	41 ^s 84	25 ^s 9	49 ^s 58	50 ^s 5
17	36 ^s 58	14 ^s 9	61 ^s 88	50 ^s 5	17	41 ^s 84	26 ^s 2	49 ^s 16	50 ^s 4
18	36 ^s 92	15 ^s 3	61 ^s 46	50 ^s 6	18	41 ^s 82	26 ^s 6	48 ^s 75	50 ^s 4
19	37 ^s 26	15 ^s 7	61 ^s 04	50 ^s 6	19	41 ^s 79	27 ^s 0	48 ^s 34	50 ^s 3
20	37 ^s 58	16 ^s 0	60 ^s 62	50 ^s 7	20	41 ^s 75	27 ^s 3	47 ^s 92	50 ^s 2
21	37 ^s 90	16 ^s 4	60 ^s 20	50 ^s 7	21	41 ^s 70	27 ^s 7	47 ^s 50	50 ^s 1
22	38 ^s 20	16 ^s 8	59 ^s 78	50 ^s 8	22	41 ^s 64	28 ^s 1	47 ^s 09	50 ^s 0
23	38 ^s 48	17 ^s 2	59 ^s 36	50 ^s 8	23	41 ^s 56	28 ^s 5	46 ^s 69	49 ^s 9
24	38 ^s 76	17 ^s 5	58 ^s 93	50 ^s 8	24	41 ^s 47	28 ^s 9	46 ^s 29	49 ^s 8
25	39 ^s 03	17 ^s 9	58 ^s 50	50 ^s 9	25	41 ^s 37	29 ^s 3	45 ^s 90	49 ^s 7
26	39 ^s 28	18 ^s 2	58 ^s 07	50 ^s 9	26	41 ^s 25	29 ^s 6	45 ^s 50	49 ^s 6
27	39 ^s 52	18 ^s 6	57 ^s 65	51 ^s 0	27	41 ^s 11	30 ^s 0	45 ^s 11	49 ^s 5
28	39 ^s 76	19 ^s 0	57 ^s 22	51 ^s 0	28	40 ^s 96	30 ^s 4	44 ^s 72	49 ^s 3
29	39 ^s 98	19 ^s 3	56 ^s 80	51 ^s 0	29	40 ^s 81	30 ^s 7	44 ^s 33	49 ^s 2
30	40 ^s 18	19 ^s 7	56 ^s 37	51 ^s 0	30	40 ^s 65	31 ^s 1	43 ^s 94	49 ^s 1
31	40 ^s 37	20 ^s 1	55 ^s 94	51 ^s 0	31	40 ^s 48	31 ^s 5	43 ^s 55	48 ^s 9
					32	40 ^s 29	31 ^s 9	43 ^s 17	48 ^s 7

APPARENT PLACES OF α AND δ URSAE MINORIS,
FOR THE UPPER TRANSIT AT GREENWICH.

NOVEMBER.					DECEMBER.					
Day of the Month.	α URSAE MINOR. (Polaris)			δ URSAE MINOR.		Day of the Month.	α URSAE MINOR. (Polaris)		δ URSAE MINOR.	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.		Dec. N.	R. A.	Dec. N.	
	^h 1 ^m 3	^o 88 28	^h 18 ^m 22	^o 86 35		^h 1 ^m 3	^o 88 28	^h 18 ^m 22	^o 86 35	
1	40 29	31 9	43 17	48 7	1	28 90	41 5	33 65	42 4	
2	40 08	32 2	42 79	48 6	2	28 35	41 8	33 41	42 1	
3	39 86	32 6	42 43	48 5	3	27 80	42 0	33 17	41 8	
4	39 63	32 9	42 06	48 4	4	27 23	42 3	32 95	41 5	
5	39 39	33 2	41 69	48 2	5	26 65	42 5	32 73	41 2	
6	39 14	33 6	41 33	48 0	6	26 07	42 7	32 51	40 9	
7	38 87	33 9	40 97	47 8	7	25 47	42 9	32 30	40 7	
8	38 59	34 3	40 61	47 6	8	24 86	43 2	32 09	40 4	
9	38 30	34 7	40 26	47 4	9	24 25	43 4	31 89	40 1	
10	37 99	35 0	39 91	47 3	10	23 62	43 6	31 70	39 8	
11	37 67	35 3	39 56	47 1	11	22 98	43 8	31 52	39 5	
12	37 34	35 7	39 21	46 9	12	22 33	44 0	31 34	39 2	
13	36 99	36 0	38 88	46 7	13	21 68	44 2	31 17	38 9	
14	36 64	36 3	38 55	46 5	14	21 02	44 4	31 01	38 6	
15	36 28	36 7	38 22	46 2	15	20 36	44 6	30 85	38 2	
16	35 91	37 0	37 90	46 0	16	19 69	44 8	30 70	37 9	
17	35 53	37 3	37 58	45 8	17	19 01	45 0	30 55	37 6	
18	35 13	37 6	37 26	45 6	18	18 32	45 2	30 41	37 3	
19	34 72	37 9	36 95	45 4	19	17 62	45 4	30 28	37 0	
20	34 30	38 3	36 65	45 2	20	16 91	45 6	30 16	36 7	
21	33 87	38 6	36 35	44 9	21	16 20	45 7	30 04	36 4	
22	33 43	38 9	36 06	44 7	22	15 49	45 9	29 94	36 1	
23	32 98	39 2	35 77	44 4	23	14 77	46 0	29 84	35 8	
24	32 51	39 5	35 48	44 1	24	14 04	46 1	29 75	35 4	
25	32 02	39 8	35 21	43 9	25	13 31	46 3	29 66	35 0	
26	31 53	40 1	34 94	43 7	26	12 57	46 4	29		
27	31 03	40 4	34 67	43 4	27	11 83	46 5			
28	30 51	40 7	34 41	43 2	28	11 08	46 7			
29	29 99	40 9	34 15	42 9	29	10 33	46 8			
30	29 45	41 2	33 89	42 6	30	9 57	46 9			
31	28 90	41 5	33 65	42 4	31	8 81	47 0			
					32	8 05	47 1			

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α ANDROMEDÆ.		γ PEGASI. (Algenib)		β Hydri.	
	R. A.	Dec. North.	R. A.	Dec. North.	R. A.	Dec. South.
	^h 0 ^m 0	^o 28 ⁱ 13	^h 0 ^m 5	^o 14 ⁱ 18	^h 0 ^m 17	^o 78 ⁱ 8
Jan. 1	14 ^s 37 ^s 0 ^s 13	21 ^s 3 ^s 1 ^s 0	7 ^s 04 ^s 0 ^s 11	28 ^s 5 ^s 0 ^s 8	22 ^s 41 ^s 0 ^s 93	58 ^s 1 ^s 1 ^s 7
11	14 ^s 24 ^s 0 ^s 13	20 ^s 3 ^s 1 ^s 1	6 ^s 93 ^s 0 ^s 10	27 ^s 7 ^s 1 ^s 0	21 ^s 48 ^s 0 ^s 87	56 ^s 9 ^s 1 ^s 7
21	14 ^s 11 ^s 0 ^s 10	19 ^s 2 ^s 1 ^s 5	6 ^s 83 ^s 0 ^s 09	26 ^s 7 ^s 0 ^s 9	20 ^s 61 ^s 0 ^s 77	55 ^s 2 ^s 2 ^s 3
31	14 ^s 01 ^s 0 ^s 09	17 ^s 7 ^s 1 ^s 5	6 ^s 74 ^s 0 ^s 08	25 ^s 8 ^s 1 ^s 1	19 ^s 84 ^s 0 ^s 67	52 ^s 9 ^s 2 ^s 7
Feb. 10	13 ^s 92 ^s 0 ^s 07	16 ^s 2 ^s 1 ^s 6	6 ^s 66 ^s 0 ^s 05	24 ^s 7 ^s 1 ^s 0	19 ^s 17 ^s 0 ^s 54	50 ^s 2 ^s 3 ^s 2
20	13 ^s 85 ^s 0 ^s 03	14 ^s 6 ^s 1 ^s 5	6 ^s 61 ^s 0 ^s 02	23 ^s 7 ^s 0 ^s 8	18 ^s 63 ^s 0 ^s 40	47 ^s 0 ^s 3 ^s 4
Mar. 3	13 ^s 82 ^s 0 ^s 01	13 ^s 1 ^s 1 ^s 5	6 ^s 59 ^s 0 ^s 00	22 ^s 9 ^s 0 ^s 7	18 ^s 23 ^s 0 ^s 25	43 ^s 6 ^s 3 ^s 7
12	13 ^s 83 ^s 0 ^s 05	11 ^s 6 ^s 1 ^s 4	6 ^s 59 ^s 0 ^s 05	22 ^s 2 ^s 0 ^s 6	17 ^s 98 ^s 0 ^s 09	39 ^s 9 ^s 3 ^s 8
22	13 ^s 88 ^s 0 ^s 10	10 ^s 2 ^s 1 ^s 1	6 ^s 64 ^s 0 ^s 09	21 ^s 6 ^s 0 ^s 3	17 ^s 89 ^s 0 ^s 08	36 ^s 1 ^s 4 ^s 2
Apr. 1	* 13 ^s 98 ^s 0 ^s 15	9 ^s 1 ^s 0 ^s 8	* 6 ^s 73 ^s 0 ^s 13	21 ^s 3 ^s 0 ^s 0	* 17 ^s 97 ^s 0 ^s 24	31 ^s 9 ^s 3 ^s 8
11	14 ^s 13 ^s 0 ^s 19	8 ^s 3 ^s 0 ^s 4	6 ^s 86 ^s 0 ^s 18	21 ^s 3 ^s 0 ^s 3	18 ^s 21 ^s 0 ^s 41	28 ^s 1 ^s 3 ^s 7
21	14 ^s 32 ^s 0 ^s 23	7 ^s 9 ^s 0 ^s 1	7 ^s 04 ^s 0 ^s 20	21 ^s 6 ^s 0 ^s 6	18 ^s 62 ^s 0 ^s 55	24 ^s 4 ^s 3 ^s 5
May 1	14 ^s 55 ^s 0 ^s 27	7 ^s 8 ^s 0 ^s 3	7 ^s 24 ^s 0 ^s 25	22 ^s 2 ^s 0 ^s 9	19 ^s 17 ^s 0 ^s 69	20 ^s 9 ^s 3 ^s 2
11	14 ^s 82 ^s 0 ^s 30	8 ^s 1 ^s 0 ^s 7	7 ^s 49 ^s 0 ^s 28	23 ^s 1 ^s 1 ^s 3	19 ^s 86 ^s 0 ^s 81	17 ^s 7 ^s 3 ^s 0
21	15 ^s 12 ^s 0 ^s 33	8 ^s 8 ^s 1 ^s 2	7 ^s 77 ^s 0 ^s 30	24 ^s 4 ^s 1 ^s 5	20 ^s 67 ^s 0 ^s 93	14 ^s 7 ^s 2 ^s 4
31	15 ^s 45 ^s 0 ^s 34	10 ^s 0 ^s 1 ^s 4	8 ^s 07 ^s 0 ^s 32	25 ^s 9 ^s 1 ^s 7	21 ^s 60 ^s 1 ^s 01	12 ^s 3 ^s 2 ^s 1
June 10	15 ^s 79 ^s 0 ^s 35	11 ^s 4 ^s 1 ^s 8	8 ^s 39 ^s 0 ^s 32	27 ^s 6 ^s 2 ^s 0	22 ^s 61 ^s 1 ^s 07	10 ^s 2 ^s 1 ^s 5
20	16 ^s 14 ^s 0 ^s 38	13 ^s 2 ^s 2 ^s 0	8 ^s 71 ^s 0 ^s 33	29 ^s 6 ^s 2 ^s 1	23 ^s 68 ^s 1 ^s 10	8 ^s 7 ^s 1 ^s 0
30	16 ^s 49 ^s 0 ^s 34	15 ^s 2 ^s 2 ^s 2	9 ^s 04 ^s 0 ^s 32	31 ^s 7 ^s 2 ^s 1	24 ^s 78 ^s 1 ^s 11	7 ^s 7 ^s 0 ^s 4
July 10	16 ^s 83 ^s 0 ^s 31	17 ^s 4 ^s 2 ^s 4	9 ^s 36 ^s 0 ^s 30	33 ^s 8 ^s 2 ^s 2	25 ^s 89 ^s 1 ^s 08	7 ^s 3 ^s 0 ^s 1
20	17 ^s 14 ^s 0 ^s 30	19 ^s 8 ^s 2 ^s 6	9 ^s 66 ^s 0 ^s 28	36 ^s 0 ^s 2 ^s 2	26 ^s 97 ^s 1 ^s 02	7 ^s 4 ^s 0 ^s 7
30	17 ^s 44 ^s 0 ^s 26	22 ^s 4 ^s 2 ^s 5	9 ^s 94 ^s 0 ^s 25	38 ^s 2 ^s 2 ^s 1	27 ^s 99 ^s 0 ^s 93	8 ^s 1 ^s 1 ^s 4
Aug. 9	17 ^s 70 ^s 0 ^s 22	24 ^s 9 ^s 2 ^s 5	10 ^s 19 ^s 0 ^s 22	40 ^s 3 ^s 2 ^s 0	28 ^s 92 ^s 0 ^s 81	9 ^s 5 ^s 1 ^s 6
19	17 ^s 92 ^s 0 ^s 19	27 ^s 4 ^s 2 ^s 5	10 ^s 41 ^s 0 ^s 18	42 ^s 3 ^s 1 ^s 8	29 ^s 73 ^s 0 ^s 66	11 ^s 1 ^s 2 ^s 2
29	18 ^s 11 ^s 0 ^s 14	29 ^s 9 ^s 2 ^s 3	10 ^s 59 ^s 0 ^s 14	44 ^s 1 ^s 1 ^s 7	30 ^s 39 ^s 0 ^s 50	13 ^s 3 ^s 2 ^s 6
Sept. 8	18 ^s 25 ^s 0 ^s 10	32 ^s 2 ^s 2 ^s 3	10 ^s 73 ^s 0 ^s 10	45 ^s 8 ^s 1 ^s 4	30 ^s 89 ^s 0 ^s 31	15 ^s 9 ^s 2 ^s 9
18	18 ^s 35 ^s 0 ^s 06	34 ^s 5 ^s 2 ^s 0	10 ^s 83 ^s 0 ^s 07	47 ^s 2 ^s 1 ^s 3	31 ^s 20 ^s 0 ^s 12	18 ^s 8 ^s 3 ^s 0
28	18 ^s 41 ^s 0 ^s 03	36 ^s 5 ^s 1 ^s 8	10 ^s 90 ^s 0 ^s 03	48 ^s 5 ^s 1 ^s 0	31 ^s 32 ^s 0 ^s 08	21 ^s 8 ^s 3 ^s 0
Oct. 8	18 ^s 44 ^s 0 ^s 01	38 ^s 3 ^s 1 ^s 6	10 ^s 93 ^s 0 ^s 01	49 ^s 5 ^s 0 ^s 8	31 ^s 24 ^s 0 ^s 26	24 ^s 8 ^s 3 ^s 0
18	18 ^s 43 ^s 0 ^s 04	39 ^s 9 ^s 1 ^s 3	10 ^s 92 ^s 0 ^s 03	50 ^s 3 ^s 0 ^s 5	30 ^s 98 ^s 0 ^s 45	27 ^s 8 ^s 2 ^s 3
28	18 ^s 39 ^s 0 ^s 07	41 ^s 2 ^s 1 ^s 0	10 ^s 89 ^s 0 ^s 05	50 ^s 8 ^s 0 ^s 4	30 ^s 53 ^s 0 ^s 61	30 ^s 6 ^s 2 ^s 4
Nov. 7	18 ^s 32 ^s 0 ^s 09	42 ^s 2 ^s 0 ^s 7	10 ^s 84 ^s 0 ^s 07	51 ^s 2 ^s 0 ^s 1	29 ^s 92 ^s 0 ^s 75	33 ^s 0 ^s 2 ^s 1
17	18 ^s 23 ^s 0 ^s 10	42 ^s 9 ^s 0 ^s 4	10 ^s 77 ^s 0 ^s 09	51 ^s 3 ^s 0 ^s 1	29 ^s 17 ^s 0 ^s 85	35 ^s 1 ^s 1 ^s 6
27	18 ^s 13 ^s 0 ^s 12	43 ^s 3 ^s 0 ^s 0	10 ^s 68 ^s 0 ^s 10	51 ^s 2 ^s 0 ^s 3	28 ^s 32 ^s 0 ^s 93	36 ^s 7 ^s 1 ^s 0
Dec. 7	18 ^s 01 ^s 0 ^s 13	43 ^s 3 ^s 0 ^s 2	10 ^s 58 ^s 0 ^s 11	50 ^s 9 ^s 0 ^s 5	27 ^s 39 ^s 0 ^s 97	37 ^s 7 ^s 0 ^s 4
17	17 ^s 88 ^s 0 ^s 14	43 ^s 1 ^s 0 ^s 5	10 ^s 47 ^s 0 ^s 11	50 ^s 4 ^s 0 ^s 6	26 ^s 42 ^s 0 ^s 98	38 ^s 1 ^s 0 ^s 3
27	17 ^s 74 ^s 0 ^s 13	42 ^s 6 ^s 0 ^s 8	10 ^s 36 ^s 0 ^s 12	49 ^s 8 ^s 0 ^s 8	25 ^s 44 ^s 0 ^s 07	37 ^s 8 ^s 0 ^s 8

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α Cassiopeæ.		β Ceti.		θ^1 Ceti.	
	R. A.	Dec. North.	R. A.	Dec. South.	R. A.	Dec. South.
	^h 0 ^m 31	^o 55 ['] 40	^h 0 ^m 35	^o 18 ['] 50	^h 1 ^m 16	^o 8 ['] 59
Jan. 1	35° 14 ^s	34° 2 ["]	40° 25 ^s	76° 5 ["]	8° 82 ^s	55° 5 ["]
11	34° 87 ^{0.27}	33° 7 ^{0.5}	40° 13 ^{0.12}	76° 9 ^{0.4}	8° 70 ^{0.12}	56° 2 ^{0.7}
21	34° 60 ^{0.27}	32° 7 ^{1.0}	40° 01 ^{0.12}	77° 1 ^{0.2}	8° 58 ^{0.12}	56° 7 ^{0.5}
31	34° 36 ^{0.24}	31° 2 ^{1.5}	39° 90 ^{0.11}	77° 0 ^{0.1}	8° 46 ^{0.12}	57° 1 ^{0.4}
Feb. 10	34° 13 ^{0.23}	29° 4 ^{1.8}	39° 80 ^{0.10}	76° 6 ^{0.4}	8° 34 ^{0.12}	57° 2 ^{0.1}
20	33° 95 ^{0.18}	27° 2 ^{2.2}	39° 72 ^{0.08}	76° 0 ^{0.6}	8° 24 ^{0.10}	57° 1 ^{0.1}
Mar. 2	33° 81 ^{0.14}	24° 8 ^{2.4}	39° 66 ^{0.06}	75° 1 ^{0.9}	8° 15 ^{0.09}	56° 8 ^{0.3}
12	33° 74 ^{0.07}	22° 4 ^{2.4}	39° 64 ^{0.02}	73° 9 ^{1.2}	8° 10 ^{0.05}	56° 2 ^{0.6}
22	33° 73 ^{0.01}	19° 9 ^{2.5}	39° 65 ^{0.01}	72° 5 ^{1.4}	8° 07 ^{0.03}	55° 4 ^{0.8}
Apr. 1	*33° 80 ^{0.07}	17° 2 ^{2.7}	*39° 70 ^{0.05}	70° 6 ^{1.9}	8° 07 ^{0.00}	54° 4 ^{1.0}
11	33° 95 ^{0.15}	15° 0 ^{2.2}	39° 79 ^{0.09}	68° 7 ^{1.9}	*8° 13 ^{0.06}	53° 0 ^{1.4}
21	34° 17 ^{0.22}	13° 1 ^{1.9}	39° 92 ^{0.13}	66° 6 ^{2.1}	8° 22 ^{0.09}	51° 4 ^{1.6}
May 1	34° 46 ^{0.29}	11° 6 ^{1.5}	40° 10 ^{0.18}	64° 4 ^{2.2}	8° 36 ^{0.14}	49° 7 ^{1.7}
11	34° 81 ^{0.35}	10° 5 ^{1.1}	40° 31 ^{0.21}	62° 1 ^{2.3}	8° 53 ^{0.17}	47° 8 ^{1.9}
21	35° 21 ^{0.40}	9° 9 ^{0.6}	40° 56 ^{0.25}	59° 7 ^{2.4}	8° 75 ^{0.22}	45° 8 ^{2.0}
31	35° 66 ^{0.45}	9° 8 ^{0.1}	40° 84 ^{0.28}	57° 3 ^{2.4}	9° 00 ^{0.25}	43° 6 ^{2.2}
June 10	36° 13 ^{0.47}	10° 2 ^{0.4}	41° 14 ^{0.30}	54° 9 ^{2.4}	9° 28 ^{0.28}	41° 4 ^{2.2}
20	36° 62 ^{0.49}	11° 0 ^{0.8}	41° 46 ^{0.32}	52° 7 ^{2.2}	9° 58 ^{0.30}	39° 2 ^{2.2}
30	37° 11 ^{0.49}	12° 4 ^{1.4}	41° 79 ^{0.33}	50° 6 ^{2.1}	9° 89 ^{0.31}	37° 1 ^{2.1}
July 10	37° 59 ^{0.48}	14° 1 ^{1.7}	42° 11 ^{0.32}	48° 8 ^{1.8}	10° 20 ^{0.31}	35° 1 ^{2.0}
20	38° 06 ^{0.47}	16° 3 ^{2.2}	42° 43 ^{0.32}	47° 2 ^{1.6}	10° 52 ^{0.32}	33° 3 ^{1.8}
30	38° 49 ^{0.43}	18° 7 ^{2.4}	42° 73 ^{0.30}	46° 0 ^{1.2}	10° 82 ^{0.30}	31° 7 ^{1.6}
Aug. 9	38° 89 ^{0.40}	21° 5 ^{2.8}	43° 01 ^{0.28}	45° 0 ^{1.0}	11° 11 ^{0.29}	30° 3 ^{1.4}
19	39° 24 ^{0.35}	24° 5 ^{3.0}	43° 25 ^{0.24}	44° 4 ^{0.6}	11° 37 ^{0.26}	29° 3 ^{1.0}
29	39° 53 ^{0.29}	27° 6 ^{3.1}	43° 46 ^{0.21}	44° 3 ^{0.1}	11° 60 ^{0.23}	28° 5 ^{0.8}
Sept. 8	39° 77 ^{0.24}	30° 9 ^{3.3}	43° 63 ^{0.17}	44° 4 ^{0.1}	11° 81 ^{0.21}	28° 1 ^{0.4}
18	39° 96 ^{0.19}	34° 1 ^{3.2}	43° 76 ^{0.13}	44° 9 ^{0.5}	11° 97 ^{0.16}	28° 0 ^{0.1}
28	40° 08 ^{0.12}	37° 3 ^{3.2}	43° 85 ^{0.09}	45° 6 ^{0.7}	12° 11 ^{0.14}	28° 2 ^{0.2}
Oct. 8	40° 15 ^{0.07}	40° 5 ^{3.2}	43° 91 ^{0.06}	46° 6 ^{1.0}	12° 31 ^{0.09}	28° 2 ^{0.4}
18	40° 17 ^{0.02}	43° 4 ^{2.9}	43° 93 ^{0.02}	47° 7 ^{1.1}	12° 20	
28	40° 13 ^{0.04}	46° 1 ^{2.7}	43° 92 ^{0.01}	47° 7 ^{1.3}	12° 27	
Nov. 7	40° 04 ^{0.09}	48° 5 ^{2.4}	43° 87 ^{0.05}	49° 0 ^{1.4}	12° 30	
17	39° 91 ^{0.13}	50° 6 ^{2.1}	43° 87 ^{0.06}	50° 4 ^{1.4}	12° 31	
27	39° 74 ^{0.17}	52° 3 ^{1.7}	43° 81 ^{0.09}	51° 7 ^{1.3}	12° 4	
Dec. 7	39° 53 ^{0.21}	53° 6 ^{1.3}	43° 72 ^{0.10}	53° 0 ^{1.3}	12° 4	
17	39° 30 ^{0.23}	54° 3 ^{0.7}	43° 62 ^{0.12}	54° 1 ^{1.1}	12° 4	
27	39° 04 ^{0.26}	54° 6 ^{0.3}	43° 50 ^{0.12}	55° 1 ^{1.0}	12° 4	
37	38° 77 ^{0.27}	54° 3 ^{0.3}	43° 38 ^{0.13}	55° 9 ^{0.8}	12° 4	
			43° 25 ^{0.13}	56° 5 ^{0.8}		

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α Eridani. (Achernar)				α ARIETIS.				γ Ceti.						
	R. A.		Dec. South.		R. A.		Dec. North.		R. A.		Dec. North.				
	^h	^m	^o	ⁱ	^h	^m	^o	ⁱ	^h	^m	^o	ⁱ			
Jan. 1	51	02	0 ^s 24	98	6	0 ^s 3	18	10	57	6	0 ^s 3	8	79	5	3
11	50	68	0 ^s 33	98	9	0 ^s 2	17	99	57	3	0 ^s 6	8	70	4	6
21	50	35	0 ^s 24	98	7	0 ^s 8	17	86	56	7	0 ^s 6	8	59	3	9
31	50	01	0 ^s 31	97	9	1 ^s 4	17	72	56	1	0 ^s 8	8	46	3	3
Feb. 10	49	70	0 ^s 29	96	5	1 ^s 8	17	57	55	3	0 ^s 9	8	32	2	9
20	49	41	0 ^s 25	94	7	2 ^s 3	17	44	54	4	0 ^s 9	8	18	2	5
Mar. 2	49	16	0 ^s 21	92	4	2 ^s 7	17	32	53	5	1 ^s 0	8	05	2	2
12	48	95	0 ^s 16	89	7	2 ^s 9	17	22	52	5	0 ^s 9	7	93	2	2
22	48	79	0 ^s 09	86	8	2 ^s 3	17	15	51	6	0 ^s 8	7	84	2	2
Apr. 1	48	70	0 ^s 03	83	5	2 ^s 4	17	12	50	8	0 ^s 8	7	77	2	5
11	48	67	0 ^s 05	80	1	2 ^s 9	17	13	50	2	0 ^s 6	7	75	3	0
21	48	72	0 ^s 12	76	2	2 ^s 6	17	19	49	7	0 ^s 5	7	77	3	7
May 1	48	84	0 ^s 18	72	6	2 ^s 6	17	32	49	5	0 ^s 2	7	83	4	7
11	49	02	0 ^s 26	69	0	2 ^s 3	17	48	49	6	0 ^s 1	7	94	5	8
21	49	28	0 ^s 31	65	6	2 ^s 3	17	69	49	9	0 ^s 3	8	10	7	1
31	49	59	0 ^s 37	62	3	2 ^s 9	17	93	50	5	0 ^s 6	8	29	8	7
June 10	49	96	0 ^s 42	59	4	2 ^s 6	18	21	51	4	1 ^s 1	8	53	10	3
20	50	38	0 ^s 44	56	8	2 ^s 2	18	52	52	5	1 ^s 1	8	79	12	0
30	50	82	0 ^s 47	54	6	1 ^s 7	18	85	53	9	1 ^s 5	9	07	13	3
July 10	51	29	0 ^s 48	52	9	1 ^s 3	19	19	55	4	1 ^s 7	9	37	15	7
20	51	77	0 ^s 47	51	6	0 ^s 6	19	52	57	1	1 ^s 8	9	68	17	4
30	52	24	0 ^s 45	51	0	0 ^s 1	19	86	58	9	1 ^s 8	9	99	19	1
Aug. 9	52	69	0 ^s 48	50	9	0 ^s 5	20	18	60	7	1 ^s 8	10	30	20	6
19	53	12	0 ^s 38	51	4	1 ^s 1	20	48	62	5	1 ^s 8	10	59	22	0
29	53	50	0 ^s 33	52	5	1 ^s 5	20	76	64	3	1 ^s 8	10	87	23	1
Sept. 8	53	83	0 ^s 27	54	0	1 ^s 5	21	02	66	0	1 ^s 7	11	13	24	0
18	54	10	0 ^s 20	56	0	1 ^s 7	21	23	67	5	1 ^s 5	11	36	24	6
28	54	30	0 ^s 13	58	4	1 ^s 7	21	43	69	0	1 ^s 3	11	56	25	0
Oct. 8	54	43	0 ^s 06	61	1	1 ^s 3	21	58	70	3	1 ^s 3	11	74	25	1
18	54	49	0 ^s 01	64	0	1 ^s 3	21	71	71	5	1 ^s 2	11	89	25	0
28	54	48	0 ^s 07	66	9	1 ^s 3	21	80	72	5	1 ^s 0	12	00	24	6
Nov. 7	54	41	0 ^s 14	69	8	1 ^s 3	21	86	73	3	0 ^s 8	12	09	24	1
17	54	27	0 ^s 20	72	6	1 ^s 3	21	89	73	9	0 ^s 6	12	15	23	5
27	54	07	0 ^s 24	75	1	1 ^s 5	21	89	74	3	0 ^s 4	12	18	22	7
Dec. 7	53	83	0 ^s 28	77	2	1 ^s 7	21	86	74	6	0 ^s 3	12	18	21	9
17	53	55	0 ^s 31	78	9	1 ^s 1	21	80	74	7	0 ^s 2	12	14	21	1
27	53	24	0 ^s 33	80	0	0 ^s 7	21	71	74	5	0 ^s 2	12	08	20	3

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α Ceti.		α Persei.		γ Tauri.	
	R. A.	Dec. North.	R. A.	Dec. North.	R. A.	Dec. North.
	^h 2 ^m 54	^o 3 ⁱ 28	^h 3 ^m 13	^o 49 ⁱ 17	^h 3 ^m 38	^o 23 ⁱ 36
Jan. 1	^s 3 ^s 27 ⁰ 09	^s 3 ^s 8 ⁰ 08	^s 6 ^s 76 ⁰ 14	^s 51 ^s 7 ⁰ 09	^s 8 ^s 25 ⁰ 07	^s 54 ^s 0 ⁰ 00
11	3 18 ⁰ 11	3 0 ⁰ 6	6 62 ⁰ 18	52 6 ⁰ 6	8 18 ⁰ 09	54 0 ⁰ 2
21	3 07 ⁰ 12	2 4 ⁰ 6	6 44 ⁰ 22	53 2 ⁰ 2	8 09 ⁰ 13	53 8 ⁰ 2
31	2 95 ⁰ 15	1 8 ⁰ 5	6 22 ⁰ 24	53 4 ⁰ 3	7 96 ⁰ 15	53 6 ⁰ 3
Feb. 10	2 80 ⁰ 14	1 3 ⁰ 4	5 98 ⁰ 25	53 1 ⁰ 5	7 81 ⁰ 17	53 3 ⁰ 5
20	2 66 ⁰ 14	0 9 ⁰ 3	5 73 ⁰ 22	52 6 ⁰ 1 2	7 64 ⁰ 16	52 8 ⁰ 5
Mar. 2	2 52 ⁰ 11	0 6 ⁰ 0	5 49 ⁰ 20	51 6 ⁰ 1 5	7 47 ⁰ 14	52 3 ⁰ 7
12	2 39 ⁰ 08	0 5 ⁰ 2	5 27 ⁰ 14	50 4 ⁰ 1 7	7 31 ⁰ 11	51 7 ⁰ 6
22	2 28 ⁰ 08	0 5 ⁰ 2	5 07 ⁰ 14	48 9 ⁰ 1 7	7 17 ⁰ 08	51 0 ⁰ 6
Apr. 1	2 20 ⁰ 04	0 7 ⁰ 4	4 93 ⁰ 10	47 2 ⁰ 1 8	7 06 ⁰ 08	50 4 ⁰ 6
11	2 16 ⁰ 04	1 1 ⁰ 6	4 83 ⁰ 08	45 4 ⁰ 1 8	6 98 ⁰ 04	49 8 ⁰ 5
21	2 16 ⁰ 04	1 7 ⁰ 8	4 80 ⁰ 04	43 6 ⁰ 1 7	6 94 ⁰ 01	49 3 ⁰ 4
May 1	* 2 20 ⁰ 10	2 5 ⁰ 1 1	* 4 84 ⁰ 12	41 9 ⁰ 1 7	6 95 ⁰ 06	48 9 ⁰ 3
11	2 30 ⁰ 14	3 6 ⁰ 1 3	4 96 ⁰ 18	40 2 ⁰ 1 6	* 7 01 ⁰ 12	48 6 ⁰ 1
21	2 44 ⁰ 18	4 9 ⁰ 1 4	5 14 ⁰ 24	38 6 ⁰ 0 9	* 7 13 ⁰ 16	48 5 ⁰ 3
31	2 62 ⁰ 22	6 3 ⁰ 1 5	5 38 ⁰ 30	37 4 ⁰ 0 9	7 29 ⁰ 21	48 6 ⁰ 3
June 10	2 84 ⁰ 25	7 8 ⁰ 1 6	5 68 ⁰ 34	36 5 ⁰ 0 6	7 50 ⁰ 24	48 9 ⁰ 5
20	3 09 ⁰ 28	9 4 ⁰ 1 8	6 02 ⁰ 39	35 9 ⁰ 0 3	7 74 ⁰ 28	49 4 ⁰ 6
30	3 37 ⁰ 31	11 2 ⁰ 1 7	6 41 ⁰ 42	35 6 ⁰ 0 4	8 02 ⁰ 30	50 0 ⁰ 9
July 10	3 66 ⁰ 31	12 9 ⁰ 1 7	6 83 ⁰ 44	35 6 ⁰ 0 4	8 32 ⁰ 32	50 9 ⁰ 9
20	3 97 ⁰ 31	14 6 ⁰ 1 7	7 27 ⁰ 44	36 0 ⁰ 0 6	8 64 ⁰ 33	51 8 ⁰ 1 1
30	4 28 ⁰ 31	16 3 ⁰ 1 5	7 71 ⁰ 45	36 6 ⁰ 1 0	8 97 ⁰ 33	52 9 ⁰ 1 1
Aug. 9	4 59 ⁰ 28	17 8 ⁰ 1 1	8 16 ⁰ 43	37 6 ⁰ 1 5	9 30 ⁰ 33	54 0 ⁰ 1 2
19	4 89 ⁰ 27	19 1 ⁰ 0 9	8 60 ⁰ 41	38 8 ⁰ 1 7	9 63 ⁰ 31	55 1 ⁰ 1 1
29	5 17 ⁰ 24	20 2 ⁰ 0 6	9 03 ⁰ 38	40 3 ⁰ 2 0	9 96 ⁰ 27	56 3 ⁰ 0 9
Sept. 8	5 44 ⁰ 22	21 1 ⁰ 0 1	9 44 ⁰ 35	42 0 ⁰ 2 0	10 27 ⁰ 25	57 4 ⁰ 0 7
18	5 68 ⁰ 19	21 7 ⁰ 0 1	9 82 ⁰ 32	43 8 ⁰ 2 1	10 57 ⁰ 20	58 4 ⁰ 0 7
28	5 90 ⁰ 17	22 1 ⁰ 0 1	10 17 ⁰ 32	45 8 ⁰ 2 1	10 84 ⁰ 15	59 4 ⁰ 0 9
Oct. 8	6 09 ⁰ 17	22 2 ⁰ 0 1	10 49 ⁰ 27	47 8 ⁰ 2 1	11 09 ⁰ 11	60 2 ⁰ 7
18	6 26 ⁰ 13	22 1 ⁰ 0 4	10 76 ⁰ 24	49 9 ⁰ 2 2	11 32 ⁰ 11	60 2 ⁰ 7
28	6 39 ⁰ 11	21 7 ⁰ 0 5	11 00 ⁰ 19	52 1 ⁰ 2 1	11 52 ⁰ 11	60 2 ⁰ 7
Nov. 7	6 50 ⁰ 08	21 2 ⁰ 0 6	11 19 ⁰ 14	54 2 ⁰ 2 1	11 69 ⁰ 11	60 2 ⁰ 7
17	6 58 ⁰ 05	20 6 ⁰ 0 7	11 33 ⁰ 09	56 3 ⁰ 1 9	11 8 ⁰ 11	60 2 ⁰ 7
27	6 63 ⁰ 01	19 9 ⁰ 0 8	11 42 ⁰ 04	58 2 ⁰ 1 8	11 5 ⁰ 11	60 2 ⁰ 7
Dec. 7	6 64 ⁰ 02	19 1 ⁰ 0 8	11 46 ⁰ 02	60 0 ⁰ 1 6	12 1 ⁰ 11	60 2 ⁰ 7
17	6 62 ⁰ 04	18 2 ⁰ 0 8	11 44 ⁰ 06	61 6 ⁰ 1 4	12 1 ⁰ 11	60 2 ⁰ 7
27	6 58 ⁰ 08	17 4 ⁰ 0 8	11 38 ⁰ 13	63 0 ⁰ 1 0	12 1 ⁰ 11	60 2 ⁰ 7

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	γ^1 Eridani.		α TAURI. (Aldebaran)		α AURIGÆ. (Capella)	
	R. A.	Dec. South.	R. A.	Dec. North.	R. A.	Dec. North.
	^h 3 ^m 50	^o 13 ⁱ 57	^h 4 ^m 26	^o 16 ⁱ 11	^h 5 ^m 5	^o 45 ⁱ 49
Jan. 1	41° 50' ^s 0° 08'	39° 6' ⁿ 1° 4'	53° 88' ^s 0° 07'	18° 5' ⁿ 0° 3'	4° 62' ^s 0° 01'	58° 6' ⁿ 1° 3'
11	41° 42' ^s 0° 10'	41° 0' ⁿ 1° 2'	53° 85' ^s 0° 07'	18° 2' ⁿ 0° 3'	4° 61' ^s 0° 06'	59° 9' ⁿ 1° 1'
21	41° 32' ^s 0° 13'	42° 2' ⁿ 1° 0'	53° 78' ^s 0° 10'	17° 9' ⁿ 0° 4'	4° 55' ^s 0° 13'	61° 0' ⁿ 1° 0'
31	41° 19' ^s 0° 16'	43° 2' ⁿ 0° 7'	53° 68' ^s 0° 13'	17° 5' ⁿ 0° 3'	4° 42' ^s 0° 17'	62° 0' ⁿ 0° 7'
Feb. 10	41° 03' ^s 0° 17'	43° 9' ⁿ 0° 3'	53° 55' ^s 0° 15'	17° 2' ⁿ 0° 3'	4° 25' ^s 0° 21'	62° 7' ⁿ 0° 4'
20	40° 86' ^s 0° 17'	44° 2' ⁿ 0° 1'	53° 40' ^s 0° 17'	16° 9' ⁿ 0° 3'	4° 04' ^s 0° 23'	63° 1' ⁿ 0° 1'
Mar. 2	40° 69' ^s 0° 17'	44° 3' ⁿ 0° 2'	53° 23' ^s 0° 17'	16° 6' ⁿ 0° 4'	3° 81' ^s 0° 24'	63° 2' ⁿ 0° 2'
12	40° 52' ^s 0° 15'	44° 1' ⁿ 0° 5'	53° 06' ^s 0° 16'	16° 2' ⁿ 0° 2'	3° 57' ^s 0° 24'	63° 0' ⁿ 0° 4'
22	40° 37' ^s 0° 13'	43° 6' ⁿ 0° 8'	52° 90' ^s 0° 14'	16° 0' ⁿ 0° 3'	3° 33' ^s 0° 23'	62° 6' ⁿ 0° 3'
Apr. 1	40° 24' ^s 0° 11'	42° 8' ⁿ 1° 1'	52° 76' ^s 0° 11'	15° 7' ⁿ 0° 2'	3° 10' ^s 0° 19'	61° 8' ⁿ 1° 0'
11	40° 13' ^s 0° 06'	41° 7' ⁿ 1° 3'	52° 65' ^s 0° 08'	15° 5' ⁿ 0° 2'	2° 91' ^s 0° 15'	60° 8' ⁿ 1° 3'
21	40° 07' ^s 0° 02'	40° 4' ⁿ 1° 6'	52° 57' ^s 0° 03'	15° 3' ⁿ 0° 0'	2° 76' ^s 0° 10'	59° 6' ⁿ 1° 3'
May 1	40° 05' ^s 0° 08'	38° 8' ⁿ 1° 8'	52° 54' ^s 0° 01'	15° 3' ⁿ 0° 1'	2° 66' ^s 0° 04'	58° 3' ⁿ 1° 4'
11	40° 07' ^s 0° 07'	37° 0' ⁿ 2° 0'	52° 55' ^s 0° 06'	15° 4' ⁿ 0° 2'	2° 62' ^s 0° 03'	56° 9' ⁿ 1° 5'
21	40° 14' ^s 0° 12'	35° 0' ⁿ 2° 2'	52° 61' ^s 0° 10'	15° 6' ⁿ 0° 4'	2° 65' ^s 0° 08'	55° 4' ⁿ 1° 4'
31	40° 26' ^s 0° 16'	32° 8' ⁿ 2° 3'	52° 71' ^s 0° 15'	16° 0' ⁿ 0° 5'	2° 73' ^s 0° 15'	54° 0' ⁿ 1° 4'
June 10	40° 42' ^s 0° 20'	30° 5' ⁿ 2° 3'	52° 86' ^s 0° 20'	16° 5' ⁿ 0° 7'	2° 88' ^s 0° 21'	52° 6' ⁿ 1° 2'
20	40° 62' ^s 0° 23'	28° 2' ⁿ 2° 3'	53° 06' ^s 0° 23'	17° 2' ⁿ 0° 8'	3° 09' ^s 0° 26'	51° 4' ⁿ 1° 1'
30	40° 85' ^s 0° 25'	25° 9' ⁿ 2° 1'	53° 29' ^s 0° 26'	18° 0' ⁿ 0° 8'	3° 35' ^s 0° 30'	50° 3' ⁿ 0° 8'
July 10	41° 10' ^s 0° 28'	23° 8' ⁿ 2° 1'	53° 55' ^s 0° 28'	18° 8' ⁿ 0° 9'	3° 65' ^s 0° 34'	49° 5' ⁿ 0° 7'
20	41° 38' ^s 0° 29'	21° 7' ⁿ 1° 8'	53° 83' ^s 0° 29'	19° 7' ⁿ 1° 0'	3° 99' ^s 0° 37'	48° 8' ⁿ 0° 5'
30	41° 67' ^s 0° 30'	19° 9' ⁿ 1° 5'	54° 12' ^s 0° 31'	20° 7' ⁿ 1° 0'	4° 36' ^s 0° 39'	48° 3' ⁿ 0° 3'
Aug. 9	41° 97' ^s 0° 30'	18° 4' ⁿ 1° 2'	54° 43' ^s 0° 31'	21° 7' ⁿ 0° 9'	4° 75' ^s 0° 41'	48° 0' ⁿ 0° 1'
19	42° 27' ^s 0° 30'	17° 2' ⁿ 0° 9'	54° 74' ^s 0° 32'	22° 6' ⁿ 0° 8'	5° 16' ^s 0° 42'	47° 9' ⁿ 0° 1'
29	42° 57' ^s 0° 29'	16° 3' ⁿ 0° 4'	55° 06' ^s 0° 31'	23° 4' ⁿ 0° 7'	5° 58' ^s 0° 42'	48° 0' ⁿ 0° 3'
Sept. 8	42° 86' ^s 0° 27'	15° 9' ⁿ 0° 1'	55° 37' ^s 0° 30'	24° 1' ⁿ 0° 6'	6° 00' ^s 0° 41'	48° 3' ⁿ 0° 5'
18	43° 13' ^s 0° 25'	15° 8' ⁿ 0° 3'	55° 67' ^s 0° 29'	24° 7' ⁿ 0° 5'	6° 41' ^s 0° 41'	48° 8' ⁿ 0° 6'
28	43° 38' ^s 0° 24'	16° 1' ⁿ 0° 7'	55° 96' ^s 0° 27'	25° 2' ⁿ 0° 3'	6° 82' ^s 0° 40'	49° 4' ⁿ 0° 8'
Oct. 8	43° 62' ^s 0° 21'	16° 8' ⁿ 1° 1'	56° 23' ^s 0° 26'	25° 5' ⁿ 0° 1'	7° 22' ^s 0° 38'	50° 2' ⁿ 0° 9'
18	43° 83' ^s 0° 18'	17° 9' ⁿ 1° 4'	56° 49' ^s 0° 23'	25° 6' ⁿ 0° 1'	7° 60' ^s 0° 36'	51° 1' ⁿ 1° 0'
28	44° 01' ^s 0° 15'	19° 3' ⁿ 1° 6'	56° 72' ^s 0° 21'	25° 7' ⁿ 0° 1'	7° 96' ^s 0° 32'	52° 1' ⁿ 1° 2'
Nov. 7	44° 16' ^s 0° 12'	20° 9' ⁿ 1° 7'	56° 93' ^s 0° 18'	25° 6' ⁿ 0° 2'	8° 28' ^s 0° 29'	53° 3' ⁿ 1° 3'
17	44° 28' ^s 0° 09'	22° 6' ⁿ 1° 9'	57° 11' ^s 0° 15'	25° 4' ⁿ 0° 2'	8° 57' ^s 0° 25'	54° 6' ⁿ 1° 3'
27	44° 37' ^s 0° 05'	24° 5' ⁿ 1° 9'	57° 26' ^s 0° 11'	25° 2' ⁿ 0° 3'	8° 82' ^s 0° 20'	55° 9' ⁿ 1° 4'
Dec. 7	44° 42' ^s 0° 01'	26° 4' ⁿ 1° 8'	57° 37' ^s 0° 07'	24° 9' ⁿ 0° 3'	9° 02' ^s 0° 14'	57° 3' ⁿ 1° 4'
17	44° 43' ^s 0° 02'	28° 2' ⁿ 1° 8'	57° 44' ^s 0° 03'	24° 6' ⁿ 0° 3'	9° 16' ^s 0° 08'	58° 7' ⁿ 1° 4'
27	44° 41' ^s 0° 06'	30° 0' ⁿ 1° 5'	57° 47' ^s 0° 01'	24° 3' ⁿ 0° 3'	9° 24' ^s 0° 04'	60° 1' ⁿ 1° 3'

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	β ORIONIS. (Rigel)			β TAURI.				δ ORIONIS.				
	R. A.		Dec. South.	R. A.		Dec. North.		R. A.	Dec. South.			
	^h 5	^m 6	^o 8	['] 23	^h 5	^m 16	^o 28	['] 28	^h 5	^m 23	^o 0	['] 25
Jan. 1	58° 98'		17° 3'		21° 07'		9° 8'		58° 43'		13° 3'	
11	58° 97'	0 ^s .01	18° 9'	1 ^s .6	21° 09'	0 ^s .02	10° 1'	0 ^s .3	58° 44'	0 ^s .01	14° 6'	1 ^s .3
21	58° 92'	0 ^s .05	20° 3'	1 ^s .4	21° 05'	0 ^s .04	10° 5'	0 ^s .4	58° 41'	0 ^s .03	15° 7'	1 ^s .1
31	58° 83'	0 ^s .09	21° 5'	1 ^s .2	20° 97'	0 ^s .08	10° 7'	0 ^s .2	58° 33'	0 ^s .08	16° 6'	0 ^s .9
		0 ^s .13		0 ^s .9		0 ^s .12		0 ^s .2		0 ^s .11		0 ^s .8
Feb. 10	58° 70'		22° 4'		20° 85'		10° 9'		58° 22'		17° 4'	
20	58° 55'	0 ^s .15	23° 1'	0 ^s .7	20° 70'	0 ^s .15	11° 0'	0 ^s .1	58° 09'	0 ^s .18	18° 0'	0 ^s .6
Mar. 2	58° 39'	0 ^s .16	23° 6'	0 ^s .5	20° 52'	0 ^s .18	10° 9'	0 ^s .1	57° 93'	0 ^s .16	18° 5'	0 ^s .5
12	58° 21'	0 ^s .18	23° 8'	0 ^s .2	20° 34'	0 ^s .18	10° 8'	0 ^s .1	57° 76'	0 ^s .17	18° 7'	0 ^s .2
		0 ^s .18		0 ^s .1		0 ^s .19		0 ^s .3		0 ^s .17		0 ^s .1
22	58° 03'		23° 7'		20° 15'		10° 5'		57° 59'		18° 8'	
Apr. 1	57° 87'	0 ^s .16	23° 4'	0 ^s .3	19° 97'	0 ^s .18	10° 1'	0 ^s .4	57° 42'	0 ^s .17	18° 7'	0 ^s .1
11	57° 73'	0 ^s .14	22° 9'	0 ^s .5	19° 82'	0 ^s .15	9° 7'	0 ^s .4	57° 28'	0 ^s .14	18° 4'	0 ^s .3
21	57° 61'	0 ^s .12	22° 1'	0 ^s .8	19° 70'	0 ^s .12	9° 1'	0 ^s .6	57° 16'	0 ^s .12	17° 9'	0 ^s .5
		0 ^s .08		1 ^s .1		0 ^s .08		0 ^s .5		0 ^s .08		0 ^s .7
May 1	57° 53'		21° 0'		19° 62'		8° 6'		57° 08'		17° 2'	
11	57° 49'	0 ^s .04	19° 8'	1 ^s .2	19° 59'	0 ^s .03	8° 0'	0 ^s .6	57° 03'	0 ^s .05	16° 4'	0 ^s .8
21	57° 50'	0 ^s .01	18° 4'	1 ^s .4	19° 60'	0 ^s .01	7° 5'	0 ^s .5	57° 03'	0 ^s .00	15° 4'	1 ^s .0
31	57° 54'	0 ^s .04	16° 7'	1 ^s .7	19° 66'	0 ^s .06	7° 0'	0 ^s .5	57° 07'	0 ^s .04	14° 3'	1 ^s .1
		0 ^s .10		1 ^s .9		0 ^s .12		0 ^s .4		0 ^s .08		1 ^s .3
June 10	57° 64'		14° 8'		19° 78'		6° 6'		57° 15'		13° 0'	
20	57° 77'	0 ^s .13	13° 0'	1 ^s .8	19° 95'	0 ^s .17	6° 4'	0 ^s .2	57° 28'	0 ^s .13	11° 5'	1 ^s .5
30	57° 94'	0 ^s .17	11° 1'	1 ^s .9	20° 15'	0 ^s .20	6° 2'	0 ^s .2	57° 44'	0 ^s .16	10° 1'	1 ^s .4
July 10	58° 15'	0 ^s .21	9° 2'	1 ^s .9	20° 39'	0 ^s .24	6° 2'	0 ^s .0	57° 64'	0 ^s .20	8° 6'	1 ^s .5
		0 ^s .23		1 ^s .7		0 ^s .27		0 ^s .0		0 ^s .22		1 ^s .4
20	58° 38'		7° 5'		20° 66'		6° 2'		57° 86'		7° 2'	
30	58° 63'	0 ^s .25	5° 8'	1 ^s .7	20° 95'	0 ^s .29	6° 4'	0 ^s .2	58° 10'	0 ^s .24	5° 9'	1 ^s .3
Aug. 9	58° 90'	0 ^s .27	4° 3'	1 ^s .5	21° 26'	0 ^s .21	6° 6'	0 ^s .2	58° 37'	0 ^s .27	4° 7'	1 ^s .2
19	59° 18'	0 ^s .28	3° 1'	1 ^s .2	21° 59'	0 ^s .23	6° 9'	0 ^s .2	58° 65'	0 ^s .28	3° 7'	1 ^s .0
		0 ^s .29		0 ^s .9		0 ^s .33		0 ^s .3		0 ^s .28		0 ^s .8
29	59° 47'		2° 2'		21° 92'		7° 2'		58° 93'		2° 9'	
Sept. 8	59° 76'	0 ^s .29	1° 6'	0 ^s .6	22° 26'	0 ^s .34	7° 5'	0 ^s .3	59° 22'	0 ^s .29	2° 3'	0 ^s .6
18	60° 05'	0 ^s .39	1° 4'	0 ^s .2	22° 60'	0 ^s .34	7° 8'	0 ^s .3	59° 52'	0 ^s .30	2° 1'	0 ^s .2
28	60° 33'	0 ^s .28	1° 5'	0 ^s .1	22° 94'	0 ^s .34	8° 1'	0 ^s .3	59° 80'	0 ^s .28	2° 1'	0 ^s .0
		0 ^s .28		0 ^s .5		0 ^s .32		0 ^s .3		0 ^s .29		
Oct. 8	60° 61'		2° 0'		23° 26'		8° 4'		60° 09'			
18	60° 87'	0 ^s .26	2° 8'	0 ^s .8	23° 57'	0 ^s .31	8° 7'	0 ^s .3	60° 36'	0 ^s .27		
28	61° 11'	0 ^s .24	4° 0'	1 ^s .2	23° 87'	0 ^s .30	9° 0'	0 ^s .3	60° 36'	0 ^s .25		
Nov. 7	61° 33'	0 ^s .22	5° 5'	1 ^s .5	24° 14'	0 ^s .27	9° 2'	0 ^s .2				
		0 ^s .20		1 ^s .6		0 ^s .25		0 ^s .3				
17	61° 53'		7° 1'		24° 39'		9° 5'					
27	61° 69'	0 ^s .16	8° 8'	1 ^s .7	24° 61'	0 ^s .22	9° 8'	0 ^s .0				
Dec. 7	61° 82'	0 ^s .13	10° 7'	1 ^s .9	24° 78'	0 ^s .17	10° 1'					
17	61° 92'	0 ^s .10	12° 6'	1 ^s .9	24° 92'	0 ^s .14	10° 4'					
		0 ^s .05		1 ^s .8		0 ^s .09						
27	61° 97'		14° 4'		25° 01'		10° 8'					
37	61° 97'	0 ^s .00	16° 0'	1 ^s .6	25° 04'	0 ^s .02	11°					

**APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.**

Day of the Month.	♋ Leporis.		♌ ORIONIS.		♍ Columbae.	
	R. A.	Dec. South.	R. A.	Dec. South.	R. A.	Dec. South.
	^h 5 ^m 25	^o 17 ['] 56	^h 5 ^m 28	^o 1 ['] 18	^h 5 ^m 33	^o 34 ['] 9
Jan. 1	48°00 ^s	24°1 ⁿ	14°14 ^s	25°2 ⁿ	58°10 ^s	42°5 ⁿ
11	48°00 ^{0.00}	26°1 ^{2.0}	14°16 ^{0.02}	26°6 ^{1.4}	58°07 ^{0.03}	45°3 ^{2.3}
21	47°95 ^{0.05}	28°0 ^{1.9}	14°13 ^{0.03}	27°7 ^{1.1}	57°99 ^{0.08}	47°7 ^{2.4}
31	47°85 ^{0.10}	29°6 ^{1.6}	14°06 ^{0.07}	28°7 ^{1.0}	57°86 ^{0.13}	49°8 ^{2.1}
Feb. 10	47°72 ^{0.13}	30°9 ^{1.3}	13°95 ^{0.11}	29°6 ^{0.9}	57°69 ^{0.17}	51°5 ^{1.7}
20	47°56 ^{0.16}	31°9 ^{1.0}	13°81 ^{0.14}	30°2 ^{0.6}	57°49 ^{0.20}	52°8 ^{1.3}
Mar. 2	47°39 ^{0.17}	32°5 ^{0.6}	13°66 ^{0.15}	30°7 ^{0.5}	57°27 ^{0.22}	53°7 ^{0.9}
12	47°19 ^{0.20}	32°8 ^{0.3}	13°49 ^{0.17}	30°9 ^{0.2}	57°03 ^{0.24}	54°1 ^{0.4}
22	47°00 ^{0.19}	32°8 ^{0.0}	13°32 ^{0.17}	31°0 ^{0.1}	56°79 ^{0.24}	54°1 ^{0.0}
Apr. 1	46°82 ^{0.18}	32°4 ^{0.4}	13°15 ^{0.17}	30°9 ^{0.1}	56°56 ^{0.23}	53°6 ^{0.5}
11	46°65 ^{0.17}	31°7 ^{0.7}	13°00 ^{0.15}	30°6 ^{0.3}	56°35 ^{0.21}	52°6 ^{1.0}
21	46°51 ^{0.14}	30°7 ^{1.0}	12°88 ^{0.12}	30°1 ^{0.5}	56°16 ^{0.19}	51°3 ^{1.3}
May 1	46°41 ^{0.10}	29°4 ^{1.3}	12°80 ^{0.08}	29°4 ^{0.7}	56°01 ^{0.15}	49°6 ^{1.7}
11	46°34 ^{0.07}	27°9 ^{1.5}	12°75 ^{0.05}	28°5 ^{0.9}	55°90 ^{0.11}	47°6 ^{2.0}
21	46°32 ^{0.02}	26°1 ^{1.8}	12°74 ^{0.01}	27°5 ^{1.0}	55°84 ^{0.06}	45°3 ^{2.3}
31	46°34 ^{0.02}	24°1 ^{2.0}	12°77 ^{0.03}	26°3 ^{1.2}	55°82 ^{0.02}	42°8 ^{2.5}
June 10	46°40 ^{0.06}	22°0 ^{2.1}	12°85 ^{0.08}	25°0 ^{1.3}	55°85 ^{0.03}	40°1 ^{2.7}
20	46°51 ^{0.11}	19°5 ^{2.5}	12°98 ^{0.13}	23°5 ^{1.5}	55°94 ^{0.09}	36°9 ^{3.2}
30	46°66 ^{0.15}	17°3 ^{2.2}	13°13 ^{0.15}	22°0 ^{1.5}	56°07 ^{0.13}	34°1 ^{3.8}
July 10	46°84 ^{0.18}	15°0 ^{2.3}	13°32 ^{0.19}	20°5 ^{1.5}	56°24 ^{0.17}	31°3 ^{2.8}
20	47°06 ^{0.22}	12°9 ^{2.1}	13°54 ^{0.22}	19°1 ^{1.4}	56°44 ^{0.20}	28°6 ^{2.7}
30	47°29 ^{0.23}	11°0 ^{1.9}	13°79 ^{0.25}	17°8 ^{1.3}	56°68 ^{0.24}	26°2 ^{2.4}
Aug. 9	47°55 ^{0.26}	9°2 ^{1.8}	14°05 ^{0.26}	16°5 ^{1.3}	56°95 ^{0.27}	24°1 ^{2.1}
19	47°83 ^{0.28}	7°8 ^{1.4}	14°32 ^{0.27}	15°5 ^{1.0}	57°24 ^{0.29}	22°3 ^{1.8}
29	48°12 ^{0.29}	6°7 ^{1.1}	14°61 ^{0.29}	14°7 ^{0.8}	57°55 ^{0.31}	21°0 ^{1.3}
Sept. 8	48°41 ^{0.29}	6°0 ^{0.7}	14°90 ^{0.29}	14°1 ^{0.6}	57°87 ^{0.32}	20°2 ^{0.8}
18	48°71 ^{0.30}	5°8 ^{0.2}	15°19 ^{0.29}	13°9 ^{0.2}	58°19 ^{0.32}	20°0 ^{0.2}
28	49°00 ^{0.29}	6°0 ^{0.3}	15°48 ^{0.29}	13°9 ^{0.0}	58°51 ^{0.32}	20°3 ^{0.3}
Oct. 8	49°28 ^{0.28}	6°7 ^{0.7}	15°76 ^{0.28}	14°3 ^{0.4}	58°82 ^{0.31}	21°2 ^{0.9}
18	49°55 ^{0.27}	7°8 ^{1.1}	16°03 ^{0.27}	15°0 ^{0.7}	59°12 ^{0.30}	22°5 ^{1.3}
28	49°81 ^{0.26}	9°3 ^{1.5}	16°29 ^{0.26}	15°9 ^{0.9}	59°40 ^{0.28}	24°4 ^{1.9}
Nov. 7	50°05 ^{0.24}	11°1 ^{1.8}	16°53 ^{0.24}	17°1 ^{1.2}	59°65 ^{0.25}	26°7 ^{2.3}
17	50°26 ^{0.21}	13°2 ^{2.1}	16°75 ^{0.22}	18°4 ^{1.3}	59°87 ^{0.22}	27°7 ^{2.7}
27	50°43 ^{0.17}	15°5 ^{2.3}	16°94 ^{0.19}	18°4 ^{1.5}	59°87 ^{0.19}	29°4 ^{2.9}
Dec. 7	50°58 ^{0.15}	17°8 ^{2.3}	17°09 ^{0.15}	19°9 ^{1.5}	60°06 ^{0.14}	32°3 ^{3.0}
17	50°68 ^{0.10}	20°2 ^{2.4}	17°21 ^{0.12}	21°4 ^{1.5}	60°20 ^{0.10}	35°3 ^{3.1}
27	50°74 ^{0.06}	22°6 ^{2.4}	17°29 ^{0.08}	22°9 ^{1.5}	60°30 ^{0.10}	38°4 ^{3.0}
37	50°75 ^{0.01}	24°8 ^{2.2}	17°32 ^{0.03}	25°8 ^{1.4}	60°33 ^{0.01}	41°4 ^{2.9}

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α ORIONIS.		β Geminorum.		α Argus. (Caropus)	
	R. A.	Dec. North.	R. A.	Dec. North.	R. A.	Dec. South.
	^h 5 ^m 46	[°] 7 ['] 22	^h 6 ^m 13	[°] 22 ['] 35	^h 6 ^m 20	[°] 52 ['] 36
Jan. 1	39° 50'	23° 2'	26° 68'	23° 5'	29° 42'	40° 7'
11	39° 54' 0.04	23° 3' 0.9	26° 70' 0.07	23° 4' 0.1	29° 39' 0.03	44° 2' 3.8
21	39° 53' 0.01	21° 5' 0.3	26° 72' 0.02	23° 4' 0.0	29° 29' 0.10	47° 4' 3.3
31	39° 48' 0.05	20° 3' 0.7	26° 69' 0.03	23° 5' 0.1	29° 12' 0.17	50° 3' 2.9
Feb. 10	39° 38' 0.10	20° 3' 0.5	26° 61' 0.08	23° 6' 0.1	28° 23' 0.23	52° 8' 2.5
20	39° 26' 0.12	19° 8' 0.5	26° 50' 0.11	23° 7' 0.1	28° 62' 0.27	54° 8' 2.0
Mar. 2	39° 11' 0.15	19° 5' 0.3	26° 35' 0.15	23° 8' 0.1	28° 30' 0.32	56° 4' 1.6
12	38° 94' 0.17	19° 3' 0.3	26° 18' 0.17	23° 9' 0.1	27° 96' 0.34	57° 4' 1.0
22	38° 77' 0.17	19° 2' 0.1	26° 00' 0.18	23° 9' 0.0	27° 60' 0.36	58° 0' 0.6
Apr. 1	38° 61' 0.16	19° 2' 0.0	25° 82' 0.18	23° 8' 0.1	27° 25' 0.35	58° 0' 0.0
11	38° 46' 0.15	19° 2' 0.1	25° 66' 0.16	23° 7' 0.1	26° 91' 0.34	57° 5' 0.5
21	38° 33' 0.13	19° 3' 0.2	25° 51' 0.15	23° 5' 0.2	26° 59' 0.32	56° 5' 1.0
May 1	38° 23' 0.10	19° 3' 0.3	25° 40' 0.11	23° 3' 0.2	26° 30' 0.29	55° 0' 1.5
11	38° 18' 0.05	20° 2' 0.4	25° 32' 0.08	23° 1' 0.2	26° 06' 0.24	53° 1' 1.9
21	38° 16' 0.02	20° 8' 0.6	25° 29' 0.03	22° 9' 0.2	25° 86' 0.20	50° 8' 2.3
31	38° 18' 0.02	21° 5' 0.7	25° 29' 0.00	22° 8' 0.1	25° 72' 0.14	48° 3' 2.5
June 10	38° 25' 0.07	22° 2' 0.7	25° 34' 0.05	22° 6' 0.2	25° 64' 0.08	45° 4' 2.9
20	38° 37' 0.12	23° 2' 1.0	25° 44' 0.10	22° 5' 0.1	25° 63' 0.01	42° 3' 3.1
30	38° 52' 0.15	24° 1' 0.9	25° 59' 0.15	22° 5' 0.0	25° 68' 0.04	38° 9' 3.4
July 10	38° 70' 0.18	25° 1' 1.0	25° 76' 0.17	22° 5' 0.0	25° 67' 0.11	35° 7' 3.2
20	38° 91' 0.21	26° 0' 0.9	25° 97' 0.21	22° 5' 0.0	25° 78' 0.16	31° 1' 3.1
30	38° 91' 0.24	26° 0' 1.0	25° 97' 0.24	22° 5' 0.1	25° 94' 0.22	32° 6' 2.9
Aug. 9	39° 15' 0.24	27° 0' 1.0	26° 21' 0.24	22° 6' 0.1	26° 16' 0.22	29° 7' 2.9
19	39° 40' 0.25	27° 8' 0.3	26° 47' 0.26	22° 6' 0.0	26° 43' 0.27	27° 1' 2.6
29	39° 68' 0.28	28° 3' 0.7	26° 75' 0.28	22° 7' 0.1	26° 74' 0.31	24° 8' 2.3
Sept. 8	39° 96' 0.28	28° 3' 0.6	26° 75' 0.30	22° 7' 0.0	26° 74' 0.34	24° 8' 1.8
18	40° 26' 0.30	29° 1' 0.4	27° 05' 0.31	22° 7' 0.1	27° 08' 0.37	23° 0' 1.3
28	40° 55' 0.29	29° 5' 0.2	27° 36' 0.31	22° 6' 0.1	27° 45' 0.37	21° 7' 0.7
Oct. 8	40° 55' 0.30	29° 7' 0.1	27° 67' 0.32	22° 5' 0.1	27° 85' 0.40	21° 0' 0.7
18	41° 14' 0.29	29° 6' 0.1	27° 99' 0.32	22° 3' 0.2	28° 26' 0.41	20° 9' 0.1
28	41° 43' 0.28	29° 6' 0.2	28° 32' 0.32	22° 3' 0.2		1.6
Nov. 7	41° 71' 0.25	29° 4' 0.3	28° 32' 0.32	22° 1' 0.2	28° 67'	
17	41° 96' 0.25	28° 8' 0.6	28° 64' 0.32	21° 7' 0.2	29° 0'	
27	41° 96' 0.25	28° 3' 0.9	28° 95' 0.31	21° 4' 0.3	29° 4'	
Dec. 7	41° 96' 0.25	27° 3' 0.9	29° 25' 0.30	21° 0' 0.4	29° 7'	
17	42° 20' 0.24	26° 3' 1.0	29° 25' 0.30	21° 0' 0.4		
27	42° 20' 0.24	26° 3' 1.0	29° 53' 0.28	20° 6' 0.4		
Dec. 7	42° 42' 0.22	25° 3' 1.0	29° 79' 0.26	20° 2' 0.4		
17	42° 60' 0.18	24° 2' 1.1	30° 02' 0.23	19° 9' 0.3		
27	42° 74' 0.14	23° 1' 1.1	30° 02' 0.18	19° 6' 0.3		
37	42° 84' 0.10	22° 1' 1.0	30° 20' 0.15	19° 6' 0.3		
47	42° 90' 0.06	21° 1' 1.0	30° 35' 0.09	19° 4' 0.1		
57	42° 90' 0.06	21° 1' 1.0	30° 44' 0.09	19° 3' 0.1		

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	51 (Hev.) Cephei.		α CANIS MAJORIS. (Sirius)		ε Canis Majoris.	
	R. A.	Dec. North.	R. A.	Dec. South.	R. A.	Dec. South.
	6 ^h 24 ^m	87° 15'	6 ^h 38 ^m	16° 30'	6 ^h 52 ^m	28° 45'
Jan. 1	65 ^s ·17 ^s	43 ^s ·3 ^s	13 ^s ·42 ^s	14 ^s ·7 ^s	27 ^s ·31 ^s	39 ^s ·2 ^s
11	65 ^s ·36 ^s	46 ^s ·5 ^s	13 ^s ·48 ^s	17 ^s ·1 ^s	27 ^s ·38 ^s	42 ^s ·2 ^s
21	64 ^s ·64 ^s	49 ^s ·5 ^s	13 ^s ·49 ^s	19 ^s ·3 ^s	27 ^s ·39 ^s	44 ^s ·9 ^s
31	63 ^s ·03 ^s	52 ^s ·4 ^s	13 ^s ·46 ^s	21 ^s ·3 ^s	27 ^s ·35 ^s	47 ^s ·4 ^s
Feb. 10	2 ^s ·37 ^s	2 ^s ·5 ^s	0 ^s ·08 ^s	1 ^s ·7 ^s	0 ^s ·09 ^s	2 ^s ·2 ^s
20	3 ^s ·09 ^s	2 ^s ·1 ^s	0 ^s ·12 ^s	1 ^s ·4 ^s	0 ^s ·13 ^s	1 ^s ·9 ^s
Mar. 2	3 ^s ·62 ^s	1 ^s ·6 ^s	0 ^s ·15 ^s	1 ^s ·1 ^s	0 ^s ·17 ^s	1 ^s ·5 ^s
12	4 ^s ·01 ^s	1 ^s ·1 ^s	0 ^s ·17 ^s	0 ^s ·8 ^s	0 ^s ·19 ^s	1 ^s ·1 ^s
22	4 ^s ·23 ^s	0 ^s ·4 ^s	0 ^s ·18 ^s	0 ^s ·4 ^s	0 ^s ·21 ^s	0 ^s ·7 ^s
Apr. 1	4 ^s ·36 ^s	0 ^s ·1 ^s	0 ^s ·19 ^s	0 ^s ·1 ^s	0 ^s ·21 ^s	0 ^s ·2 ^s
11	4 ^s ·01 ^s	0 ^s ·8 ^s	0 ^s ·18 ^s	0 ^s ·2 ^s	0 ^s ·21 ^s	0 ^s ·1 ^s
21	3 ^s ·82 ^s	1 ^s ·2 ^s	0 ^s ·17 ^s	0 ^s ·5 ^s	0 ^s ·20 ^s	0 ^s ·5 ^s
May 1	3 ^s ·36 ^s	1 ^s ·9 ^s	0 ^s ·14 ^s	0 ^s ·8 ^s	0 ^s ·17 ^s	0 ^s ·9 ^s
11	2 ^s ·81 ^s	2 ^s ·2 ^s	0 ^s ·11 ^s	1 ^s ·1 ^s	0 ^s ·15 ^s	1 ^s ·3 ^s
21	2 ^s ·14 ^s	2 ^s ·6 ^s	0 ^s ·08 ^s	1 ^s ·3 ^s	0 ^s ·11 ^s	1 ^s ·6 ^s
31	1 ^s ·41 ^s	2 ^s ·9 ^s	0 ^s ·04 ^s	1 ^s ·5 ^s	0 ^s ·08 ^s	1 ^s ·9 ^s
June 10	0 ^s ·62 ^s	3 ^s ·1 ^s	0 ^s ·01 ^s	1 ^s ·7 ^s	0 ^s ·03 ^s	2 ^s ·1 ^s
20	0 ^s ·15 ^s	3 ^s ·1 ^s	0 ^s ·04 ^s	1 ^s ·9 ^s	0 ^s ·01 ^s	2 ^s ·3 ^s
30	1 ^s ·08 ^s	3 ^s ·5 ^s	0 ^s ·08 ^s	1 ^s ·9 ^s	0 ^s ·05 ^s	2 ^s ·4 ^s
July 10	1 ^s ·78 ^s	3 ^s ·1 ^s	0 ^s ·12 ^s	2 ^s ·2 ^s	0 ^s ·10 ^s	2 ^s ·3 ^s
20	2 ^s ·49 ^s	2 ^s ·9 ^s	0 ^s ·15 ^s	2 ^s ·0 ^s	0 ^s ·13 ^s	2 ^s ·4 ^s
30	3 ^s ·15 ^s	2 ^s ·7 ^s	0 ^s ·18 ^s	1 ^s ·7 ^s	0 ^s ·16 ^s	2 ^s ·3 ^s
Aug. 9	3 ^s ·75 ^s	2 ^s ·4 ^s	0 ^s ·21 ^s	1 ^s ·7 ^s	0 ^s ·20 ^s	2 ^s ·2 ^s
19	4 ^s ·27 ^s	2 ^s ·2 ^s	0 ^s ·23 ^s	1 ^s ·5 ^s	0 ^s ·23 ^s	1 ^s ·9 ^s
29	4 ^s ·68 ^s	1 ^s ·7 ^s	0 ^s ·25 ^s	1 ^s ·1 ^s	0 ^s ·25 ^s	1 ^s ·6 ^s
Sept. 8	5 ^s ·04 ^s	1 ^s ·4 ^s	0 ^s ·27 ^s	0 ^s ·8 ^s	0 ^s ·28 ^s	1 ^s ·1 ^s
18	5 ^s ·27 ^s	0 ^s ·9 ^s	0 ^s ·29 ^s	0 ^s ·3 ^s	0 ^s ·29 ^s	0 ^s ·7 ^s
28	5 ^s ·40 ^s	0 ^s ·5 ^s	0 ^s ·29 ^s	0 ^s ·0 ^s	0 ^s ·30 ^s	0 ^s ·2 ^s
Oct. 8	5 ^s ·45 ^s	0 ^s ·0 ^s	0 ^s ·29 ^s	0 ^s ·5 ^s	0 ^s ·32 ^s	0 ^s ·4 ^s
18	5 ^s ·36 ^s	0 ^s ·5 ^s	0 ^s ·30 ^s	0 ^s ·9 ^s	0 ^s ·31 ^s	0 ^s ·9 ^s
28	5 ^s ·18 ^s	1 ^s ·0 ^s	0 ^s ·29 ^s	1 ^s ·4 ^s	0 ^s ·32 ^s	1 ^s ·4 ^s
Nov. 7	4 ^s ·87 ^s	1 ^s ·4 ^s	0 ^s ·28 ^s	1 ^s ·7 ^s	0 ^s ·29 ^s	1 ^s ·9 ^s
17	4 ^s ·40 ^s	1 ^s ·9 ^s	0 ^s ·27 ^s	2 ^s ·0 ^s	0 ^s ·29 ^s	2 ^s ·3 ^s
27	3 ^s ·84 ^s	2 ^s ·3 ^s	0 ^s ·24 ^s	1 ^s ·0 ^s	0 ^s ·26 ^s	2 ^s ·6 ^s
Dec. 7	3 ^s ·20 ^s	2 ^s ·6 ^s	0 ^s ·21 ^s	2 ^s ·3 ^s	0 ^s ·23 ^s	2 ^s ·9 ^s
17	2 ^s ·39 ^s	2 ^s ·9 ^s	0 ^s ·17 ^s	2 ^s ·5 ^s	0 ^s ·18 ^s	3 ^s ·0 ^s
27	1 ^s ·55 ^s	3 ^s ·0 ^s	0 ^s ·13 ^s	2 ^s ·6 ^s	0 ^s ·14 ^s	3 ^s ·0 ^s
37	0 ^s ·64 ^s	3 ^s ·2 ^s	0 ^s ·00 ^s	2 ^s ·4 ^s	0 ^s ·09 ^s	3 ^s ·1 ^s

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	♋ Geminorum.		♄ GEMINORUM. (Castor)		♁ CANIS MINORIS. (Procyon)	
	R. A.	Dec. North.	R. A.	Dec. North.	R. A.	Dec. North.
	^h 7	^m 10	^h 7	^m 24	^h 7	^m 31
		^o 22		^o 32		^o 5
		ⁱ 15		ⁱ 13		ⁱ 37
Jan. 1	43 ^s 58 ^s	60 ^s 8 ^s	33 ^s 50 ^s	39 ^s 9 ^s	3 ^s 94 ^s	29 ^s 0 ^s
11	43 ^s 71 ^s 0 ^s 13	60 ^s 6 ^s 0 ^s 2	33 ^s 66 ^s 0 ^s 16	40 ^s 3 ^s 0 ^s 4	4 ^s 08 ^s 0 ^s 14	27 ^s 6 ^s 1 ^s 4
21	43 ^s 79 ^s 0 ^s 03	60 ^s 6 ^s 0 ^s 0	33 ^s 76 ^s 0 ^s 10	40 ^s 8 ^s 0 ^s 5	4 ^s 16 ^s 0 ^s 08	26 ^s 5 ^s 1 ^s 1
31	43 ^s 81 ^s 0 ^s 02	60 ^s 6 ^s 0 ^s 0	33 ^s 80 ^s 0 ^s 04	41 ^s 4 ^s 0 ^s 6	4 ^s 20 ^s 0 ^s 04	25 ^s 5 ^s 1 ^s 0
Feb. 10	43 ^s 79 ^s 0 ^s 02	60 ^s 8 ^s 0 ^s 2	33 ^s 78 ^s 0 ^s 02	42 ^s 2 ^s 0 ^s 8	4 ^s 18 ^s 0 ^s 02	24 ^s 7 ^s 0 ^s 8
20	43 ^s 71 ^s 0 ^s 08	61 ^s 0 ^s 0 ^s 2	33 ^s 71 ^s 0 ^s 07	42 ^s 9 ^s 0 ^s 7	4 ^s 13 ^s 0 ^s 05	24 ^s 0 ^s 0 ^s 7
Mar. 2	43 ^s 60 ^s 0 ^s 11	61 ^s 2 ^s 0 ^s 2	33 ^s 59 ^s 0 ^s 12	43 ^s 6 ^s 0 ^s 7	4 ^s 03 ^s 0 ^s 10	23 ^s 6 ^s 0 ^s 4
12	43 ^s 45 ^s 0 ^s 15	61 ^s 5 ^s 0 ^s 3	33 ^s 44 ^s 0 ^s 15	44 ^s 2 ^s 0 ^s 6	3 ^s 90 ^s 0 ^s 13	23 ^s 3 ^s 0 ^s 3
22	43 ^s 29 ^s 0 ^s 16	61 ^s 7 ^s 0 ^s 2	33 ^s 27 ^s 0 ^s 17	44 ^s 7 ^s 0 ^s 5	3 ^s 75 ^s 0 ^s 15	23 ^s 1 ^s 0 ^s 2
Apr. 1	43 ^s 11 ^s 0 ^s 18	61 ^s 9 ^s 0 ^s 2	33 ^s 08 ^s 0 ^s 19	45 ^s 0 ^s 0 ^s 3	3 ^s 59 ^s 0 ^s 16	23 ^s 1 ^s 0 ^s 0
11	42 ^s 94 ^s 0 ^s 17	62 ^s 0 ^s 0 ^s 1	32 ^s 89 ^s 0 ^s 19	45 ^s 2 ^s 0 ^s 2	3 ^s 43 ^s 0 ^s 16	23 ^s 2 ^s 0 ^s 1
21	42 ^s 78 ^s 0 ^s 16	62 ^s 0 ^s 0 ^s 0	32 ^s 71 ^s 0 ^s 18	45 ^s 3 ^s 0 ^s 1	3 ^s 27 ^s 0 ^s 16	23 ^s 3 ^s 0 ^s 1
May 1	42 ^s 64 ^s 0 ^s 14	62 ^s 0 ^s 0 ^s 0	32 ^s 55 ^s 0 ^s 16	45 ^s 1 ^s 0 ^s 2	3 ^s 13 ^s 0 ^s 14	23 ^s 6 ^s 0 ^s 3
11	42 ^s 53 ^s 0 ^s 11	62 ^s 0 ^s 0 ^s 0	32 ^s 41 ^s 0 ^s 14	44 ^s 9 ^s 0 ^s 2	3 ^s 02 ^s 0 ^s 11	24 ^s 0 ^s 0 ^s 4
21	42 ^s 45 ^s 0 ^s 08	61 ^s 9 ^s 0 ^s 1	32 ^s 32 ^s 0 ^s 09	44 ^s 4 ^s 0 ^s 5	2 ^s 93 ^s 0 ^s 09	24 ^s 4 ^s 0 ^s 4
31	42 ^s 41 ^s 0 ^s 04	61 ^s 8 ^s 0 ^s 1	32 ^s 26 ^s 0 ^s 06	43 ^s 9 ^s 0 ^s 5	2 ^s 88 ^s 0 ^s 05	25 ^s 0 ^s 0 ^s 6
June 10	42 ^s 41 ^s 0 ^s 00	61 ^s 6 ^s 0 ^s 2	32 ^s 24 ^s 0 ^s 02	43 ^s 3 ^s 0 ^s 6	2 ^s 85 ^s 0 ^s 03	25 ^s 6 ^s 0 ^s 6
20	42 ^s 45 ^s 0 ^s 04	61 ^s 4 ^s 0 ^s 2	32 ^s 27 ^s 0 ^s 03	42 ^s 6 ^s 0 ^s 7	2 ^s 87 ^s 0 ^s 02	26 ^s 2 ^s 0 ^s 6
30	42 ^s 52 ^s 0 ^s 07	61 ^s 3 ^s 0 ^s 1	32 ^s 34 ^s 0 ^s 07	41 ^s 8 ^s 0 ^s 8	2 ^s 91 ^s 0 ^s 04	26 ^s 9 ^s 0 ^s 7
July 10	42 ^s 65 ^s 0 ^s 13	61 ^s 1 ^s 0 ^s 2	32 ^s 44 ^s 0 ^s 10	41 ^s 0 ^s 0 ^s 8	3 ^s 00 ^s 0 ^s 09	27 ^s 6 ^s 0 ^s 7
20	42 ^s 81 ^s 0 ^s 16	60 ^s 9 ^s 0 ^s 2	* 32 ^s 61 ^s 0 ^s 17	40 ^s 1 ^s 0 ^s 9	* 3 ^s 12 ^s 0 ^s 12	28 ^s 4 ^s 0 ^s 8
30	42 ^s 99 ^s 0 ^s 18	60 ^s 7 ^s 0 ^s 2	32 ^s 79 ^s 0 ^s 18	39 ^s 3 ^s 0 ^s 8	3 ^s 27 ^s 0 ^s 15	29 ^s 0 ^s 0 ^s 6
Aug. 9	43 ^s 20 ^s 0 ^s 21	60 ^s 4 ^s 0 ^s 3	33 ^s 01 ^s 0 ^s 22	38 ^s 4 ^s 0 ^s 9	3 ^s 45 ^s 0 ^s 18	29 ^s 5 ^s 0 ^s 5
19	43 ^s 44 ^s 0 ^s 24	60 ^s 1 ^s 0 ^s 3	33 ^s 26 ^s 0 ^s 25	37 ^s 5 ^s 0 ^s 9	3 ^s 64 ^s 0 ^s 19	29 ^s 9 ^s 0 ^s 4
29	43 ^s 70 ^s 0 ^s 26	59 ^s 4 ^s 0 ^s 4	33 ^s 53 ^s 0 ^s 27	36 ^s 7 ^s 0 ^s 8	3 ^s 87 ^s 0 ^s 23	30 ^s 2 ^s 0 ^s 3
Sept. 8	43 ^s 98 ^s 0 ^s 28	59 ^s 3 ^s 0 ^s 4	33 ^s 82 ^s 0 ^s 29	35 ^s 8 ^s 0 ^s 9	4 ^s 11 ^s 0 ^s 24	30 ^s 2 ^s 0 ^s 0
18	44 ^s 28 ^s 0 ^s 30	58 ^s 8 ^s 0 ^s 5	34 ^s 14 ^s 0 ^s 32	34 ^s 9 ^s 0 ^s 9	4 ^s 37 ^s 0 ^s 26	30 ^s 1 ^s 0 ^s 1
28	44 ^s 59 ^s 0 ^s 31	58 ^s 2 ^s 0 ^s 6	34 ^s 47 ^s 0 ^s 33	34 ^s 0 ^s 0 ^s 9	4 ^s 65 ^s 0 ^s 28	29 ^s 7 ^s 0 ^s 4
Oct. 8	44 ^s 91 ^s 0 ^s 32	57 ^s 5 ^s 0 ^s 7	34 ^s 82 ^s 0 ^s 35	33 ^s 1 ^s 0 ^s 9	4 ^s 77 ^s 0 ^s 31	29 ^s 0 ^s 0 ^s 7
18	45 ^s 24 ^s 0 ^s 33	56 ^s 8 ^s 0 ^s 7	35 ^s 17 ^s 0 ^s 35	32 ^s 3 ^s 0 ^s 8	4 ^s 89 ^s 0 ^s 34	28 ^s 9 ^s 0 ^s 9
28	45 ^s 56 ^s 0 ^s 32	56 ^s 0 ^s 0 ^s 8	35 ^s 53 ^s 0 ^s 36	31 ^s 5 ^s 0 ^s 8	4 ^s 99 ^s 0 ^s 32	28 ^s 0 ^s 1 ^s 1
Nov. 7	45 ^s 89 ^s 0 ^s 33	55 ^s 1 ^s 0 ^s 9	35 ^s 89 ^s 0 ^s 36	30 ^s 8 ^s 0 ^s 7	5 ^s 10 ^s 0 ^s 30	27 ^s 7 ^s 1 ^s 3
17	46 ^s 21 ^s 0 ^s 32	54 ^s 4 ^s 0 ^s 7	36 ^s 23 ^s 0 ^s 34	30 ^s 3 ^s 0 ^s 6	5 ^s 20 ^s 0 ^s 37	26 ^s 8 ^s 1 ^s 5
27	46 ^s 50 ^s 0 ^s 29	53 ^s 6 ^s 0 ^s 8	36 ^s 57 ^s 0 ^s 34	29 ^s 8 ^s 0 ^s 5	5 ^s 30 ^s 0 ^s 44	26 ^s 0 ^s 2 ^s 7
Dec. 7	46 ^s 78 ^s 0 ^s 28	52 ^s 9 ^s 0 ^s 7	36 ^s 88 ^s 0 ^s 31	29 ^s 6 ^s 0 ^s 4	5 ^s 40 ^s 0 ^s 51	25 ^s 9 ^s 3 ^s 0
17	47 ^s 02 ^s 0 ^s 24	52 ^s 4 ^s 0 ^s 5	37 ^s 15 ^s 0 ^s 27	29 ^s 5 ^s 0 ^s 3	5 ^s 50 ^s 0 ^s 58	25 ^s 0 ^s 4 ^s 2
27	47 ^s 22 ^s 0 ^s 20	51 ^s 9 ^s 0 ^s 5	37 ^s 53 ^s 0 ^s 23	29 ^s 4 ^s 0 ^s 2	5 ^s 60 ^s 0 ^s 65	24 ^s 9 ^s 5 ^s 4
37	47 ^s 37 ^s 0 ^s 15	51 ^s 7 ^s 0 ^s 2	37 ^s 56 ^s 0 ^s 18	29 ^s 3 ^s 0 ^s 1	5 ^s 70 ^s 0 ^s 72	24 ^s 0 ^s 6 ^s 6

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	♋ GEMINORUM. (Pollux)		15 Argus.		♋ Hydræ,	
	R. A.	Dec. North.	R. A.	Dec. South.	R. A.	Dec. North.
	^h 7 ^m 35	^o 28 ⁱ 23	^h 8 ^m 0	^o 23 ⁱ 51	^h 8 ^m 38	^o 6 ⁱ 59
Jan. 1	41 ^s 10 ^a	64 ⁿ 8 ⁿ	51 ^s 30 ^a	6 ⁿ 3 ⁿ	26 ^s 60 ^a	37 ⁿ 7 ⁿ
11	41 ^s 26 ^a 0 ^{.16}	64 ⁿ 9 ⁿ 0 ^{.1}	51 ^s 44 ^a 0 ^{.14}	9 ⁿ 2 ⁿ 9 ^{.9}	26 ^s 80 ^a 0 ^{.20}	36 ⁿ 3 ⁿ 1 ^{.4}
21	41 ^s 36 ^a 0 ^{.10}	63 ⁿ 1 ⁿ 0 ^{.2}	51 ^s 53 ^a 0 ^{.09}	12 ⁿ 0 ⁿ 2 ^{.8}	26 ^s 95 ^a 0 ^{.15}	35 ⁿ 0 ⁿ 1 ^{.3}
31	41 ^s 41 ^a 0 ^{.05}	63 ⁿ 5 ⁿ 0 ^{.4}	51 ^s 58 ^a 0 ^{.05}	14 ⁿ 6 ⁿ 2 ^{.6}	27 ^s 05 ^a 0 ^{.10}	34 ⁿ 0 ⁿ 1 ^{.0}
Feb. 10	41 ^s 41 ^a 0 ^{.00}	66 ⁿ 0 ⁿ 0 ^{.5}	51 ^s 56 ^a 0 ^{.02}	17 ⁿ 0 ⁿ 2 ^{.4}	27 ^s 10 ^a 0 ^{.05}	33 ⁿ 1 ⁿ 0 ^{.3}
20	41 ^s 35 ^a 0 ^{.06}	66 ⁿ 6 ⁿ 0 ^{.6}	51 ^s 50 ^a 0 ^{.06}	19 ⁿ 1 ⁿ 2 ^{.1}	27 ^s 11 ^a 0 ^{.01}	32 ⁿ 5 ⁿ 0 ^{.6}
Mar. 2	41 ^s 25 ^a 0 ^{.10}	67 ⁿ 2 ⁿ 0 ^{.6}	51 ^s 40 ^a 0 ^{.10}	20 ⁿ 9 ⁿ 1 ^{.8}	27 ^s 07 ^a 0 ^{.04}	32 ⁿ 1 ⁿ 0 ^{.4}
12	41 ^s 11 ^a 0 ^{.14}	67 ⁿ 7 ⁿ 0 ^{.8}	51 ^s 27 ^a 0 ^{.12}	22 ⁿ 4 ⁿ 1 ^{.5}	26 ^s 99 ^a 0 ^{.08}	31 ⁿ 9 ⁿ 0 ^{.2}
22	40 ^s 94 ^a 0 ^{.17}	68 ⁿ 2 ⁿ 0 ^{.5}	51 ^s 10 ^a 0 ^{.17}	23 ⁿ 5 ⁿ 1 ^{.1}	26 ^s 88 ^a 0 ^{.11}	31 ⁿ 8 ⁿ 0 ^{.1}
Apr. 1	40 ^s 76 ^a 0 ^{.18}	68 ⁿ 5 ⁿ 0 ^{.3}	50 ^s 93 ^a 0 ^{.17}	24 ⁿ 2 ⁿ 0 ^{.7}	26 ^s 74 ^a 0 ^{.14}	31 ⁿ 9 ⁿ 0 ^{.1}
11	40 ^s 58 ^a 0 ^{.18}	68 ⁿ 8 ⁿ 0 ^{.3}	50 ^s 74 ^a 0 ^{.19}	24 ⁿ 6 ⁿ 0 ^{.4}	26 ^s 60 ^a 0 ^{.14}	32 ⁿ 0 ⁿ 0 ^{.1}
21	40 ^s 41 ^a 0 ^{.17}	68 ⁿ 9 ⁿ 0 ^{.1}	50 ^s 56 ^a 0 ^{.18}	24 ⁿ 6 ⁿ 0 ^{.0}	26 ^s 45 ^a 0 ^{.15}	32 ⁿ 2 ⁿ 0 ^{.2}
May 1	40 ^s 25 ^a 0 ^{.16}	68 ⁿ 9 ⁿ 0 ^{.0}	50 ^s 38 ^a 0 ^{.18}	24 ⁿ 3 ⁿ 0 ^{.2}	26 ^s 31 ^a 0 ^{.14}	32 ⁿ 5 ⁿ 0 ^{.3}
11	40 ^s 12 ^a 0 ^{.13}	68 ⁿ 8 ⁿ 0 ^{.1}	50 ^s 23 ^a 0 ^{.15}	23 ⁿ 6 ⁿ 0 ^{.7}	26 ^s 18 ^a 0 ^{.13}	32 ⁿ 9 ⁿ 0 ^{.4}
21	40 ^s 02 ^a 0 ^{.10}	68 ⁿ 5 ⁿ 0 ^{.3}	50 ^s 10 ^a 0 ^{.12}	22 ⁿ 6 ⁿ 1 ^{.0}	26 ^s 08 ^a 0 ^{.10}	33 ⁿ 3 ⁿ 0 ^{.4}
31	39 ^s 95 ^a 0 ^{.07}	68 ⁿ 2 ⁿ 0 ^{.3}	49 ^s 99 ^a 0 ^{.11}	21 ⁿ 3 ⁿ 1 ^{.2}	25 ^s 99 ^a 0 ^{.09}	33 ⁿ 8 ⁿ 0 ^{.5}
June 10	39 ^s 93 ^a 0 ^{.02}	67 ⁿ 8 ⁿ 0 ^{.4}	49 ^s 92 ^a 0 ^{.07}	19 ⁿ 8 ⁿ 1 ^{.5}	25 ^s 92 ^a 0 ^{.07}	34 ⁿ 3 ⁿ 0 ^{.5}
20	39 ^s 94 ^a 0 ^{.01}	67 ⁿ 3 ⁿ 0 ^{.5}	49 ^s 88 ^a 0 ^{.04}	18 ⁿ 0 ⁿ 1 ^{.8}	25 ^s 89 ^a 0 ^{.02}	34 ⁿ 8 ⁿ 0 ^{.5}
30	40 ^s 00 ^a 0 ^{.06}	66 ⁿ 7 ⁿ 0 ^{.6}	49 ^s 87 ^a 0 ^{.01}	16 ⁿ 1 ⁿ 1 ^{.9}	25 ^s 89 ^a 0 ^{.00}	35 ⁿ 3 ⁿ 0 ^{.5}
July 10	40 ^s 09 ^a 0 ^{.09}	66 ⁿ 1 ⁿ 0 ^{.6}	49 ^s 90 ^a 0 ^{.02}	14 ⁿ 0 ⁿ 2 ^{.1}	25 ^s 91 ^a 0 ^{.02}	35 ⁿ 8 ⁿ 0 ^{.5}
20	40 ^s 23 ^a 0 ^{.14}	65 ⁿ 4 ⁿ 0 ^{.7}	49 ^s 97 ^a 0 ^{.07}	11 ⁿ 9 ⁿ 2 ^{.1}	25 ^s 97 ^a 0 ^{.06}	36 ⁿ 3 ⁿ 0 ^{.5}
30	40 ^s 40 ^a 0 ^{.17}	64 ⁿ 8 ⁿ 0 ^{.6}	50 ^s 07 ^a 0 ^{.10}	9 ⁿ 6 ⁿ 2 ^{.2}	26 ^s 05 ^a 0 ^{.08}	36 ⁿ 7 ⁿ 0 ^{.4}
Aug. 9	40 ^s 60 ^a 0 ^{.20}	64 ⁿ 0 ⁿ 0 ^{.8}	50 ^s 21 ^a 0 ^{.14}	7 ⁿ 7 ⁿ 1 ^{.9}	26 ^s 17 ^a 0 ^{.12}	37 ⁿ 0 ⁿ 0 ^{.3}
19	40 ^s 82 ^a 0 ^{.22}	63 ⁿ 3 ⁿ 0 ^{.7}	50 ^s 37 ^a 0 ^{.16}	5 ⁿ 9 ⁿ 1 ^{.8}	26 ^s 31 ^a 0 ^{.14}	37 ⁿ 2 ⁿ 0 ^{.2}
29	41 ^s 07 ^a 0 ^{.25}	62 ⁿ 5 ⁿ 0 ^{.8}	50 ^s 57 ^a 0 ^{.20}	4 ⁿ 3 ⁿ 1 ^{.6}	26 ^s 49 ^a 0 ^{.18}	37 ⁿ 2 ⁿ 0 ^{.0}
Sept. 8	41 ^s 35 ^a 0 ^{.28}	61 ⁿ 7 ⁿ 0 ^{.8}	50 ^s 57 ^a 0 ^{.22}	3 ⁿ 1 ⁿ 1 ^{.2}	26 ^s 68 ^a 0 ^{.19}	37 ⁿ 2 ⁿ 0 ^{.1}
18	41 ^s 64 ^a 0 ^{.29}	60 ⁿ 8 ⁿ 0 ^{.9}	51 ^s 04 ^a 0 ^{.25}	2 ⁿ 3 ⁿ 0 ^{.8}	26 ^s 90 ^a 0 ^{.22}	36 ⁿ 7 ⁿ 0 ^{.4}
28	41 ^s 95 ^a 0 ^{.31}	59 ⁿ 9 ⁿ 0 ^{.9}	51 ^s 31 ^a 0 ^{.27}	1 ⁿ 9 ⁿ 0 ^{.4}	27 ^s 14 ^a 0 ^{.24}	36 ⁿ 1 ⁿ 0 ^{.6}
Oct. 8	42 ^s 28 ^a 0 ^{.33}	59 ⁿ 0 ⁿ 0 ^{.9}	51 ^s 61 ^a 0 ^{.30}	0 ⁿ 1 ⁿ 0 ^{.1}	27 ^s 41 ^a 0 ^{.27}	35 ⁿ 2 ⁿ 0 ^{.9}
18	42 ^s 62 ^a 0 ^{.34}	58 ⁿ 0 ⁿ 1 ^{.9}	51 ^s 91 ^a 0 ^{.30}	2 ⁿ 0 ⁿ 0 ^{.5}	27 ^s 70 ^a 0 ^{.29}	34 ⁿ 1 ⁿ 1 ^{.1}
28	42 ^s 97 ^a 0 ^{.35}	57 ⁿ 1 ⁿ 0 ^{.9}	52 ^s 23 ^a 0 ^{.32}	2 ⁿ 5 ⁿ 1 ^{.1}	28 ^s 00 ^a 0 ^{.30}	32 ⁿ 9 ⁿ 1 ^{.2}
Nov. 7	43 ^s 32 ^a 0 ^{.35}	56 ⁿ 3 ⁿ 0 ^{.8}	52 ^s 55 ^a 0 ^{.32}	5 ⁿ 1 ⁿ 1 ^{.5}	28 ^s 31 ^a 0 ^{.31}	31 ⁿ 4 ⁿ 1 ^{.5}
17	43 ^s 66 ^a 0 ^{.34}	55 ⁿ 5 ⁿ 0 ^{.8}	52 ^s 87 ^a 0 ^{.32}	1 ⁿ 7 ⁿ 2 ^{.0}	28 ^s 63 ^a 0 ^{.32}	29 ⁿ 8 ⁿ 1 ^{.6}
27	43 ^s 98 ^a 0 ^{.32}	54 ⁿ 8 ⁿ 0 ^{.7}	53 ^s 17 ^a 0 ^{.30}	9 ⁿ 4 ⁿ 2 ^{.3}	28 ^s 95 ^a 0 ^{.32}	28 ⁿ 1 ⁿ 1 ^{.7}
Dec. 7	44 ^s 29 ^a 0 ^{.31}	54 ⁿ 2 ⁿ 0 ^{.6}	53 ^s 45 ^a 0 ^{.28}	12 ⁿ 0 ⁿ 2 ^{.6}	29 ^s 26 ^a 0 ^{.31}	26 ⁿ 3 ⁿ 1 ^{.8}
17	44 ^s 56 ^a 0 ^{.27}	53 ⁿ 9 ⁿ 0 ^{.3}	53 ^s 70 ^a 0 ^{.25}	14 ⁿ 8 ⁿ 2 ^{.8}	29 ^s 54 ^a 0 ^{.28}	24 ⁿ 6 ⁿ 1 ^{.7}
27	44 ^s 79 ^a 0 ^{.23}	53 ⁿ 7 ⁿ 0 ^{.2}	53 ^s 91 ^a 0 ^{.21}	17 ⁿ 7 ⁿ 2 ^{.9}	29 ^s 80 ^a 0 ^{.26}	23 ⁿ 0 ⁿ 1 ^{.6}
37	44 ^s 98 ^a 0 ^{.19}	53 ⁿ 7 ⁿ 0 ^{.0}	54 ^s 08 ^a 0 ^{.17}	20 ⁿ 7 ⁿ 3 ^{.0}	30 ^s 01 ^a 0 ^{.21}	21 ⁿ 5 ⁿ 1 ^{.5}

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	♄ Ursæ Majoris.		♃ Argus.		♋ HYDRUS.	
	R. A.	Dec. North.	R. A.	Dec. South.	R. A.	Dec. South.
	^h 8 ^m 48	^o 48 ['] 38	^h 9 ^m 12	^o 58 ['] 36	^h 9 ^m 19	^h 7 ^m 58
Jan. 1	24 ^s .75	75 ^s .4	53 ^s .94	41 ^s .8	51 ^s .39	37 ^s .2
11	25 ^s .04 0 ^s .29	76 ^s .3 0 ^s .9	54 ^s .22 0 ^s .28	45 ^s .5 3 ^s .7	51 ^s .60 0 ^s .21	39 ^s .5 2 ^s .3
21	25 ^s .27 0 ^s .23	77 ^s .6 1 ^s .3	54 ^s .41 0 ^s .19	49 ^s .4 3 ^s .9	51 ^s .79 0 ^s .19	41 ^s .7 2 ^s .2
31	25 ^s .42 0 ^s .15	79 ^s .0 1 ^s .4	54 ^s .52 0 ^s .11	53 ^s .2 3 ^s .8	51 ^s .93 0 ^s .14	43 ^s .7 2 ^s .0
Feb. 10	25 ^s .50 0 ^s .08	80 ^s .6 1 ^s .6	54 ^s .55 0 ^s .03	57 ^s .0 3 ^s .8	52 ^s .02 0 ^s .09	45 ^s .5 1 ^s .8
20	25 ^s .50 0 ^s .00	82 ^s .4 1 ^s .8	54 ^s .49 0 ^s .06	60 ^s .7 3 ^s .7	52 ^s .05 0 ^s .03	47 ^s .1 1 ^s .6
Mar. 2	25 ^s .44 0 ^s .06	84 ^s .1 1 ^s .7	54 ^s .37 0 ^s .12	64 ^s .1 3 ^s .4	52 ^s .04 0 ^s .01	48 ^s .4 1 ^s .3
12	25 ^s .32 0 ^s .12	85 ^s .7 1 ^s .6	54 ^s .18 0 ^s .19	67 ^s .1 3 ^s .0	51 ^s .99 0 ^s .05	49 ^s .5 1 ^s .1
22	25 ^s .15 0 ^s .17	87 ^s .2 1 ^s .5	53 ^s .93 0 ^s .25	69 ^s .9 3 ^s .8	51 ^s .91 0 ^s .08	50 ^s .3 0 ^s .8
Apr. 1	24 ^s .94 0 ^s .21	88 ^s .5 1 ^s .3	53 ^s .64 0 ^s .29	72 ^s .1 3 ^s .2	51 ^s .80 0 ^s .11	50 ^s .8 0 ^s .5
11	24 ^s .71 0 ^s .23	89 ^s .5 1 ^s .0	53 ^s .32 0 ^s .32	74 ^s .0 1 ^s .9	51 ^s .67 0 ^s .13	51 ^s .2 0 ^s .4
21	24 ^s .47 0 ^s .24	90 ^s .2 0 ^s .7	52 ^s .98 0 ^s .34	75 ^s .3 1 ^s .3	51 ^s .54 0 ^s .13	51 ^s .3 0 ^s .1
May 1	24 ^s .23 0 ^s .24	90 ^s .6 0 ^s .4	52 ^s .62 0 ^s .36	76 ^s .2 0 ^s .9	51 ^s .40 0 ^s .14	51 ^s .2 0 ^s .1
11	24 ^s .00 0 ^s .23	90 ^s .6 0 ^s .0	52 ^s .28 0 ^s .34	76 ^s .5 0 ^s .3	51 ^s .27 0 ^s .13	50 ^s .9 0 ^s .3
21	23 ^s .80 0 ^s .20	90 ^s .3 0 ^s .3	51 ^s .93 0 ^s .35	76 ^s .3 0 ^s .2	51 ^s .15 0 ^s .12	50 ^s .4 0 ^s .5
31	23 ^s .63 0 ^s .17	89 ^s .6 0 ^s .7	51 ^s .61 0 ^s .32	75 ^s .7 0 ^s .6	51 ^s .04 0 ^s .11	49 ^s .7 0 ^s .7
June 10	23 ^s .50 0 ^s .13	88 ^s .7 0 ^s .9	51 ^s .32 0 ^s .29	74 ^s .5 1 ^s .2	50 ^s .96 0 ^s .08	48 ^s .9 0 ^s .8
20	23 ^s .41 0 ^s .09	87 ^s .4 1 ^s .3	51 ^s .07 0 ^s .25	72 ^s .9 1 ^s .6	50 ^s .89 0 ^s .07	48 ^s .0 0 ^s .9
30	23 ^s .37 0 ^s .04	85 ^s .9 1 ^s .5	50 ^s .85 0 ^s .22	70 ^s .9 2 ^s .0	50 ^s .85 0 ^s .04	47 ^s .0 1 ^s .0
July 10	23 ^s .37 0 ^s .00	84 ^s .3 1 ^s .6	50 ^s .69 0 ^s .16	68 ^s .5 2 ^s .4	50 ^s .83 0 ^s .02	45 ^s .9 1 ^s .1
20	23 ^s .42 0 ^s .05	82 ^s .4 1 ^s .9	50 ^s .58 0 ^s .11	65 ^s .9 2 ^s .6	50 ^s .84 0 ^s .01	44 ^s .7 1 ^s .2
30	23 ^s .51 0 ^s .09	80 ^s .4 2 ^s .0	50 ^s .53 0 ^s .05	63 ^s .1 2 ^s .3	50 ^s .84 0 ^s .04	43 ^s .6 1 ^s .1
Aug. 9	23 ^s .67 0 ^s .16	78 ^s .1 2 ^s .3	50 ^s .54 0 ^s .01	60 ^s .2 2 ^s .9	50 ^s .88 0 ^s .06	42 ^s .5 1 ^s .1
19	23 ^s .86 0 ^s .19	76 ^s .0 2 ^s .1	50 ^s .62 0 ^s .08	57 ^s .1 3 ^s .1	50 ^s .94 0 ^s .10	41 ^s .5 1 ^s .0
29	24 ^s .08 0 ^s .22	73 ^s .8 2 ^s .2	50 ^s .77 0 ^s .15	54 ^s .2 2 ^s .9	51 ^s .17 0 ^s .13	40 ^s .7 0 ^s .8
Sept. 8	24 ^s .35 0 ^s .27	71 ^s .6 2 ^s .3	50 ^s .98 0 ^s .21	51 ^s .7 2 ^s .5	51 ^s .32 0 ^s .15	40 ^s .2 0 ^s .5
18	24 ^s .65 0 ^s .30	69 ^s .5 2 ^s .1	51 ^s .26 0 ^s .28	49 ^s .4 2 ^s .3	51 ^s .50 0 ^s .18	39 ^s .9 0 ^s .3
28	24 ^s .99 0 ^s .34	67 ^s .4 2 ^s .1	51 ^s .60 0 ^s .34	47 ^s .6 1 ^s .8	51 ^s .71 0 ^s .21	39 ^s .9 0 ^s .0
Oct. 8	25 ^s .36 0 ^s .37	65 ^s .5 1 ^s .9	52 ^s .00 0 ^s .40	46 ^s .3 1 ^s .3	51 ^s .96 0 ^s .25	40 ^s .3 0 ^s .4
18	25 ^s .77 0 ^s .41	63 ^s .7 1 ^s .8	52 ^s .44 0 ^s .44	45 ^s .6 0 ^s .7	52 ^s .22 0 ^s .26	41 ^s .0 0 ^s .7
28	26 ^s .19 0 ^s .42	62 ^s .1 1 ^s .6	52 ^s .91 0 ^s .47	45 ^s .5 0 ^s .1	52 ^s .51 0 ^s .29	42 ^s .0 1 ^s .0
Nov. 7	26 ^s .64 0 ^s .45	60 ^s .7 1 ^s .4	53 ^s .41 0 ^s .50	46 ^s .0 0 ^s .5	52 ^s .82 0 ^s .31	43 ^s .4 1 ^s .4
17	27 ^s .08 0 ^s .44	59 ^s .7 1 ^s .0	53 ^s .91 0 ^s .50	47 ^s .2 1 ^s .2	53 ^s .13 0 ^s .31	45 ^s .1 1 ^s .7
27	27 ^s .53 0 ^s .45	58 ^s .9 0 ^s .8	54 ^s .41 0 ^s .50	48 ^s .9 1 ^s .7	53 ^s .44 0 ^s .33	47 ^s .1 2 ^s .0
Dec. 7	27 ^s .97 0 ^s .44	58 ^s .6 0 ^s .3	54 ^s .88 0 ^s .47	51 ^s .4 2 ^s .5	53 ^s .75 0 ^s .31	49 ^s .2 2 ^s .1
17	28 ^s .37 0 ^s .40	58 ^s .6 0 ^s .0	55 ^s .31 0 ^s .43	54 ^s .2 2 ^s .8	54 ^s .06 0 ^s .30	51 ^s .5 2 ^s .3
27	28 ^s .74 0 ^s .37	58 ^s .9 0 ^s .3	55 ^s .68 0 ^s .37	57 ^s .5 3 ^s .3	54 ^s .37 0 ^s .28	53 ^s .8 2 ^s .2
37	29 ^s .06 0 ^s .32	59 ^s .7 0 ^s .8	55 ^s .99 0 ^s .31	61 ^s .1 3 ^s .6	54 ^s .68 0 ^s .26	56 ^s .2 2 ^s .4

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	θ Ursæ Majoris.		ε Leonis.		α LEONIS. (Regulus).	
	R. A.	Dec. North.	R. A.	Dec. North.	R. A.	Dec. North.
	9 ^h 22 ^m	52° 23'	9 ^h 36 ^m	24° 29'	9 ^h 59 ^m	12° 43'
Jan. 1	18° 47' 0"	22° 1' 0"	54° 60' 0"	46° 3' 0"	59° 13' 0"	64° 3' 0"
11	18° 82' 0.35	22° 9' 0.3	54° 87' 0.27	45° 6' 0.7	59° 40' 0.27	62° 9' 1.4
21	19° 10' 0.28	24° 1' 1.2	55° 10' 0.23	45° 2' 0.4	59° 63' 0.23	61° 8' 1.7
31	19° 31' 0.21	25° 6' 1.5	55° 27' 0.17	45° 0' 0.2	59° 82' 0.19	60° 9' 0.3
	0.13	1.8	0.12	0.2	0.13	0.7
Feb. 10	19° 44' 0.05	27° 4' 1.9	55° 39' 0.07	45° 2' 0.4	59° 95' 0.09	60° 2' 0.4
20	19° 49' 0.02	29° 3' 2.0	55° 46' 0.01	45° 6' 0.5	60° 04' 0.04	59° 8' 0.1
Mar. 2	19° 47' 0.09	31° 3' 1.9	55° 47' 0.08	46° 1' 0.7	60° 08' 0.01	59° 7' 0.1
12	19° 38' 0.16	33° 2' 1.8	55° 44' 0.07	46° 8' 0.8	60° 07' 0.05	59° 8' 0.3
22	19° 22' 0.19	35° 0' 1.7	55° 37' 0.10	47° 6' 0.9	60° 02' 0.08	60° 1' 0.3
Apr. 1	19° 03' 0.24	36° 7' 1.3	55° 27' 0.13	48° 5' 0.8	59° 94' 0.10	60° 4' 0.4
11	18° 79' 0.25	38° 0' 1.1	55° 14' 0.14	49° 3' 0.7	59° 84' 0.11	60° 8' 0.5
21	18° 54' 0.26	39° 1' 0.6	55° 00' 0.15	50° 0' 0.6	59° 73' 0.13	61° 3' 0.6
May 1	18° 28' 0.26	39° 7' 0.4	54° 85' 0.14	50° 6' 0.6	59° 60' 0.12	61° 9' 0.5
11	18° 02' 0.24	40° 1' 0.2	54° 71' 0.14	51° 2' 0.4	59° 48' 0.12	62° 2' 0.5
21	17° 78' 0.21	39° 9' 0.4	54° 57' 0.12	51° 6' 0.2	59° 36' 0.11	62° 9' 0.5
31	17° 57' 0.18	39° 5' 0.9	54° 45' 0.09	51° 8' 0.1	59° 25' 0.10	63° 4' 0.4
June 10	17° 39' 0.15	38° 6' 1.1	54° 36' 0.08	51° 9' 0.1	59° 15' 0.08	63° 8' 0.3
20	17° 24' 0.09	37° 5' 1.5	54° 28' 0.05	51° 8' 0.2	59° 07' 0.05	64° 1' 0.3
30	17° 15' 0.06	36° 0' 1.8	54° 23' 0.02	51° 6' 0.4	59° 02' 0.04	64° 4' 0.3
July 10	17° 09' 0.01	34° 2' 2.0	54° 21' 0.00	51° 2' 0.5	58° 98' 0.01	64° 6' 0.0
20	17° 08' 0.04	32° 2' 2.2	54° 21' 0.04	50° 7' 0.7	58° 97' 0.01	64° 6' 0.0
30	17° 12' 0.09	30° 0' 2.3	54° 25' 0.06	50° 0' 0.8	58° 98' 0.04	64° 6' 0.2
Aug. 9	17° 21' 0.15	27° 7' 2.7	54° 31' 0.10	49° 2' 1.1	59° 02' 0.06	64° 4' 0.3
19	17° 36' 0.18	25° 0' 2.5	54° 41' 0.12	48° 1' 1.1	59° 08' 0.10	64° 1' 0.5
29	17° 54' 0.23	22° 5' 2.6	54° 53' 0.16	47° 0' 1.3	59° 18' 0.12	63° 6' 0.7
8	17° 77' 0.28	19° 9' 2.5	54° 69' 0.18	45° 7' 1.4	59° 30' 0.16	62° 9' 0.9
18	18° 05' 0.32	17° 4' 2.5	54° 87' 0.22	44° 3' 1.6	59° 45' 0.19	62° 0' 1.0
28	18° 37' 0.36	14° 9' 2.5	55° 09' 0.25	42° 7' 1.7	59° 64' 0.21	61° 0' 1.3
8	42° 373' 0.40	12° 4' 2.2	55° 34' 0.28	41° 0' 1.7	59° 85' 0.25	59° 7' 1.4
18	42° 63' 0.43	10° 2' 2.0	55° 62' 0.30	39° 3' 1.8	60° 10' 0.28	58° 3' 1.6
28	42° 96' 0.45	8° 2' 1.7	55° 92' 0.33	37° 5' 1.9	60° 38' 0.30	56° 7' 1.8
7	43° 32' 0.47	6° 5' 1.4	56° 25' 0.34	35° 6' 1.7	60° 68' 0.32	54° 9' 1.9
17	43° 66' 0.49	5° 1' 1.1	56° 59' 0.35	33° 9' 1.7	61° 00' 0.33	53° 0' 2.0
27	43° 98' 0.47	4° 0' 0.7	56° 94' 0.35	32° 2' 1.6	61° 33' 0.33	51° 0' 1.9
7	44° 29' 0.25	3° 3' 0.2	57° 29' 0.34	30° 6' 1.4	61° 66' 0.33	49° 1' 1.9
17	44° 56' 0.23	3° 1' 0.2	57° 63' 0.32	29° 2' 1.1	61° 99' 0.31	47° 3' 1.7
27	44° 79' 0.19	3° 3' 0.6	57° 95' 0.29	28° 1' 0.8	62° 30' 0.29	45° 6' 1.5
37	44° 98' 0.19	3° 9' 0.6	58° 24' 0.29	27° 3' 0.8	62° 59' 0.29	44° 1' 1.5

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	γ Argus.		α URSE MAJORIS.		δ LEONIS.	
	R. A.	Dec. South.	R. A.	Dec. North.	R. A.	Dec. North.
	10 ^h 38 ^m	58° 51'	10 ^h 53 ^m	62° 35'	11 ^h 5 ^m	21° 22'
Jan. 1	58° 59 ^s	9° 1 ["]	58° 47 ^s	47° 7 ["]	43° 48 ^s	68° 2 ["]
11	59° 02 ^s 0 [·] 43	12° 3 ["] 3 [·] 2	59° 01 ^s 0 [·] 54	48° 0 ["] 0 [·] 3	43° 80 ^s 0 [·] 32	66° 8 ["] 1 [·] 4
21	59° 37 ^s 0 [·] 35	15° 7 ["] 3 [·] 4	59° 49 ^s 0 [·] 48	48° 9 ["] 0 [·] 9	44° 09 ^s 0 [·] 29	65° 8 ["] 1 [·] 0
31	59° 65 ^s 0 [·] 28	19° 4 ["] 3 [·] 7	59° 90 ^s 0 [·] 41	50° 3 ["] 1 [·] 4	44° 34 ^s 0 [·] 25	65° 2 ["] 0 [·] 6
Feb. 10	59° 86 ^s 0 [·] 21	23° 9 ["] 3 [·] 8	60° 23 ^s 0 [·] 33	52° 2 ["] 1 [·] 9	44° 54 ^s 0 [·] 20	64° 9 ["] 0 [·] 3
20	59° 99 ^s 0 [·] 13	26° 9 ["] 3 [·] 7	60° 46 ^s 0 [·] 23	54° 4 ["] 2 [·] 2	44° 70 ^s 0 [·] 16	64° 9 ["] 0 [·] 0
Mar. 2	60° 05 ^s 0 [·] 06	30° 6 ["] 3 [·] 7	60° 60 ^s 0 [·] 14	56° 8 ["] 2 [·] 4	44° 81 ^s 0 [·] 11	65° 2 ["] 0 [·] 3
12	60° 03 ^s 0 [·] 02	34° 1 ["] 3 [·] 5	60° 64 ^s 0 [·] 04	59° 4 ["] 2 [·] 6	44° 87 ^s 0 [·] 06	65° 8 ["] 0 [·] 6
22	59° 94 ^s 0 [·] 09	37° 5 ["] 3 [·] 4	60° 58 ^s 0 [·] 06	62° 0 ["] 2 [·] 6	44° 89 ^s 0 [·] 02	66° 6 ["] 0 [·] 8
Apr. 1	59° 80 ^s 0 [·] 14	40° 5 ["] 3 [·] 0	60° 45 ^s 0 [·] 13	64° 5 ["] 2 [·] 5	44° 86 ^s 0 [·] 03	67° 5 ["] 0 [·] 9
11	59° 61 ^s 0 [·] 19	43° 1 ["] 2 [·] 6	60° 25 ^s 0 [·] 20	66° 8 ["] 2 [·] 3	44° 81 ^s 0 [·] 05	68° 5 ["] 1 [·] 0
21	59° 38 ^s 0 [·] 23	45° 4 ["] 2 [·] 3	59° 99 ^s 0 [·] 26	68° 8 ["] 2 [·] 0	44° 73 ^s 0 [·] 08	69° 5 ["] 1 [·] 0
May 1	59° 12 ^s 0 [·] 26	47° 2 ["] 1 [·] 8	59° 68 ^s 0 [·] 31	70° 5 ["] 1 [·] 7	44° 63 ^s 0 [·] 10	70° 5 ["] 1 [·] 0
11	58° 83 ^s 0 [·] 29	48° 6 ["] 1 [·] 4	59° 35 ^s 0 [·] 33	71° 8 ["] 1 [·] 3	44° 52 ^s 0 [·] 11	71° 5 ["] 1 [·] 0
21	58° 53 ^s 0 [·] 30	49° 5 ["] 0 [·] 9	59° 00 ^s 0 [·] 35	72° 6 ["] 0 [·] 8	44° 40 ^s 0 [·] 12	72° 3 ["] 0 [·] 8
31	58° 23 ^s 0 [·] 30	49° 9 ["] 0 [·] 4	58° 65 ^s 0 [·] 35	73° 0 ["] 0 [·] 4	44° 28 ^s 0 [·] 12	72° 3 ["] 0 [·] 7
June 10	57° 92 ^s 0 [·] 31	49° 8 ["] 0 [·] 1	58° 31 ^s 0 [·] 34	72° 9 ["] 0 [·] 1	44° 17 ^s 0 [·] 11	73° 6 ["] 0 [·] 6
20	57° 63 ^s 0 [·] 29	49° 2 ["] 0 [·] 6	57° 99 ^s 0 [·] 32	72° 3 ["] 0 [·] 6	44° 06 ^s 0 [·] 11	73° 9 ["] 0 [·] 3
30	57° 36 ^s 0 [·] 27	48° 1 ["] 1 [·] 1	57° 71 ^s 0 [·] 28	71° 2 ["] 1 [·] 1	43° 97 ^s 0 [·] 09	74° 1 ["] 0 [·] 2
July 10	57° 11 ^s 0 [·] 25	46° 6 ["] 1 [·] 5	57° 46 ^s 0 [·] 25	69° 7 ["] 1 [·] 5	43° 88 ^s 0 [·] 09	74° 1 ["] 0 [·] 0
20	56° 89 ^s 0 [·] 22	44° 7 ["] 1 [·] 9	57° 25 ^s 0 [·] 21	67° 8 ["] 1 [·] 9	43° 82 ^s 0 [·] 06	73° 9 ["] 0 [·] 2
30	56° 72 ^s 0 [·] 17	42° 5 ["] 2 [·] 2	57° 09 ^s 0 [·] 16	65° 5 ["] 2 [·] 3	43° 77 ^s 0 [·] 05	73° 5 ["] 0 [·] 4
Aug. 9	56° 60 ^s 0 [·] 12	40° 0 ["] 2 [·] 5	56° 99 ^s 0 [·] 10	62° 9 ["] 2 [·] 6	43° 74 ^s 0 [·] 03	72° 9 ["] 0 [·] 6
19	56° 53 ^s 0 [·] 07	37° 3 ["] 2 [·] 7	56° 94 ^s 0 [·] 05	60° 1 ["] 2 [·] 8	43° 74 ^s 0 [·] 00	72° 0 ["] 0 [·] 9
29	56° 53 ^s 0 [·] 00	34° 5 ["] 2 [·] 8	56° 95 ^s 0 [·] 01	57° 0 ["] 3 [·] 1	43° 76 ^s 0 [·] 02	71° 0 ["] 1 [·] 0
Sept. 8	*56° 60 ^s 0 [·] 07	31° 5 ["] 3 [·] 0	*57° 04 ^s 0 [·] 09	53° 5 ["] 3 [·] 5	*43° 82 ^s 0 [·] 06	69° 7 ["] 1 [·] 3
18	56° 75 ^s 0 [·] 15	28° 9 ["] 2 [·] 6	57° 18 ^s 0 [·] 14	50° 2 ["] 3 [·] 3	43° 91 ^s 0 [·] 09	68° 2 ["] 1 [·] 5
28	56° 96 ^s 0 [·] 21	26° 5 ["] 2 [·] 4	57° 40 ^s 0 [·] 22	46° 8 ["] 3 [·] 4	44° 03 ^s 0 [·] 12	66° 6 ["] 1 [·] 6
Oct. 8	57° 25 ^s 0 [·] 29	24° 5 ["] 2 [·] 0	57° 69 ^s 0 [·] 29	43° 5 ["] 3 [·] 3	44° 19 ^s 0 [·] 16	64° 7 ["] 1 [·] 9
18	57° 61 ^s 0 [·] 36	22° 9 ["] 1 [·] 6	58° 03 ^s 0 [·] 34	40° 3 ["] 3 [·] 2	44° 39 ^s 0 [·] 20	62° 7 ["] 2 [·] 0
28	58° 02 ^s 0 [·] 41	21° 9 ["] 1 [·] 0	58° 45 ^s 0 [·] 42	37° 2 ["] 3 [·] 1	44° 62 ^s 0 [·] 23	60° 6 ["] 2 [·] 1
Nov. 7	58° 49 ^s 0 [·] 47	21° 4 ["] 0 [·] 5	58° 92 ^s 0 [·] 47	34° 5 ["] 2 [·] 9	44° 90 ^s 0 [·] 28	58° 4 ["] 2 [·] 2
17	58° 99 ^s 0 [·] 50	21° 6 ["] 0 [·] 2	59° 45 ^s 0 [·] 53	32° 0 ["] 3 [·] 0	44° 20 ^s 0 [·] 30	56° 2 ["] 2 [·] 3
27	59° 51 ^s 0 [·] 52	22° 4 ["] 0 [·] 3	60° 01 ^s 0 [·] 56	30° 0 ["] 2 [·] 9	44° 53 ^s 0 [·] 33	55° 2 ["] 2 [·] 3
Dec. 7	60° 05 ^s 0 [·] 54	23° 8 ["] 1 [·] 4	60° 60 ^s 0 [·] 59	28° 4 ["] 2 [·] 8	44° 87 ^s 0 [·] 34	54° 2 ["] 2 [·] 3
17	60° 57 ^s 0 [·] 52	25° 8 ["] 2 [·] 0	61° 20 ^s 0 [·] 60	27° 4 ["] 2 [·] 7	44° 32 ^s 0 [·] 35	53° 2 ["] 2 [·] 3
27	61° 06 ^s 0 [·] 49	28° 2 ["] 2 [·] 4	61° 79 ^s 0 [·] 59	26° 9 ["] 2 [·] 6	44° 6 ^s 0 [·] 34	52° 2 ["] 2 [·] 3
37	61° 50 ^s 0 [·] 44	31° 2 ["] 3 [·] 0	62° 34 ^s 0 [·] 55	26° 9 ["] 2 [·] 6	44° 7 ^s 0 [·] 33	51° 2 ["] 2 [·] 3

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	θ Ursæ Majoris.		ε Leonis.		α LEONIS. (Regulus)	
	R. A.	Dec. North.	R. A.	Dec. North.	R. A.	Dec. North.
	^h 9 ^m 22	^o 52 ⁱ 23	^h 9 ^m 36	^o 24 ⁱ 29	^h 9 ^m 59	^o 12 ⁱ 43
Jan. 1	18 ^s ·47 ^a	22 ⁿ ·1 ⁿ	54 ^s ·60 ^a	46 ⁿ ·3 ⁿ	59 ^s ·13 ^a	64 ⁿ ·3 ⁿ
11	18 ^s ·82 ^o ·35 ^a	22 ⁿ ·9 ^o ·8 ⁿ	54 ^s ·87 ^o ·27 ^a	45 ⁿ ·6 ^o ·7 ⁿ	59 ^s ·40 ^o ·27 ^a	62 ⁿ ·9 ^o ·1 ⁿ
21	19 ^s ·10 ^o ·28 ^a	24 ⁿ ·1 ^o ·2 ⁿ	55 ^s ·10 ^o ·23 ^a	45 ⁿ ·2 ^o ·4 ⁿ	59 ^s ·63 ^o ·23 ^a	61 ⁿ ·8 ^o ·1 ⁿ
31	19 ^s ·31 ^o ·21 ^a	25 ⁿ ·6 ^o ·1 ⁿ	55 ^s ·27 ^o ·17 ^a	45 ⁿ ·0 ^o ·2 ⁿ	59 ^s ·82 ^o ·19 ^a	60 ⁿ ·9 ^o ·0 ⁿ
Feb. 10	19 ^s ·44 ^o ·13 ^a	27 ⁿ ·4 ^o ·1 ⁿ	55 ^s ·39 ^o ·12 ^a	45 ⁿ ·2 ^o ·2 ⁿ	59 ^s ·95 ^o ·13 ^a	60 ⁿ ·2 ^o ·7 ⁿ
20	19 ^s ·49 ^o ·05 ^a	29 ⁿ ·3 ^o ·1 ⁿ	55 ^s ·46 ^o ·07 ^a	45 ⁿ ·6 ^o ·4 ⁿ	60 ^s ·04 ^o ·09 ^a	59 ⁿ ·8 ^o ·0 ⁿ
Mar. 2	19 ^s ·47 ^o ·02 ^a	31 ⁿ ·3 ^o ·2 ⁿ	55 ^s ·47 ^o ·01 ^a	46 ⁿ ·1 ^o ·5 ⁿ	60 ^s ·08 ^o ·04 ^a	59 ⁿ ·7 ^o ·0 ⁿ
12	19 ^s ·38 ^o ·09 ^a	33 ⁿ ·2 ^o ·1 ⁿ	55 ^s ·44 ^o ·08 ^a	46 ⁿ ·8 ^o ·7 ⁿ	60 ^s ·07 ^o ·01 ^a	59 ⁿ ·8 ^o ·0 ⁿ
22	19 ^s ·22 ^o ·16 ^a	35 ⁿ ·0 ^o ·1 ⁿ	55 ^s ·37 ^o ·07 ^a	47 ⁿ ·6 ^o ·8 ⁿ	60 ^s ·02 ^o ·05 ^a	60 ⁿ ·1 ^o ·3 ⁿ
Apr. 1	19 ^s ·03 ^o ·19 ^a	36 ⁿ ·7 ^o ·1 ⁿ	55 ^s ·27 ^o ·10 ^a	48 ⁿ ·5 ^o ·9 ⁿ	59 ^s ·94 ^o ·08 ^a	60 ⁿ ·4 ^o ·3 ⁿ
11	18 ^s ·79 ^o ·24 ^a	38 ⁿ ·0 ^o ·1 ⁿ	55 ^s ·14 ^o ·13 ^a	49 ⁿ ·3 ^o ·8 ⁿ	59 ^s ·84 ^o ·10 ^a	60 ⁿ ·8 ^o ·4 ⁿ
21	18 ^s ·54 ^o ·25 ^a	39 ⁿ ·1 ^o ·1 ⁿ	55 ^s ·00 ^o ·14 ^a	50 ⁿ ·0 ^o ·7 ⁿ	59 ^s ·73 ^o ·11 ^a	61 ⁿ ·3 ^o ·0 ⁿ
May 1	18 ^s ·28 ^o ·26 ^a	39 ⁿ ·7 ^o ·0 ⁿ	54 ^s ·85 ^o ·15 ^a	50 ⁿ ·6 ^o ·6 ⁿ	59 ^s ·60 ^o ·13 ^a	61 ⁿ ·9 ^o ·6 ⁿ
11	18 ^s ·02 ^o ·26 ^a	40 ⁿ ·1 ^o ·4 ⁿ	54 ^s ·71 ^o ·14 ^a	51 ⁿ ·2 ^o ·6 ⁿ	59 ^s ·48 ^o ·12 ^a	62 ⁿ ·4 ^o ·5 ⁿ
21	17 ^s ·78 ^o ·24 ^a	39 ⁿ ·9 ^o ·2 ⁿ	54 ^s ·57 ^o ·14 ^a	51 ⁿ ·6 ^o ·4 ⁿ	59 ^s ·36 ^o ·12 ^a	62 ⁿ ·9 ^o ·5 ⁿ
31	17 ^s ·57 ^o ·21 ^a	39 ⁿ ·5 ^o ·4 ⁿ	54 ^s ·45 ^o ·12 ^a	51 ⁿ ·8 ^o ·2 ⁿ	59 ^s ·25 ^o ·11 ^a	63 ⁿ ·4 ^o ·5 ⁿ
June 10	17 ^s ·39 ^o ·18 ^a	38 ⁿ ·6 ^o ·9 ⁿ	54 ^s ·36 ^o ·09 ^a	51 ⁿ ·9 ^o ·1 ⁿ	59 ^s ·15 ^o ·10 ^a	63 ⁿ ·8 ^o ·4 ⁿ
20	17 ^s ·24 ^o ·15 ^a	37 ⁿ ·5 ^o ·1 ⁿ	54 ^s ·28 ^o ·08 ^a	51 ⁿ ·8 ^o ·1 ⁿ	59 ^s ·07 ^o ·08 ^a	64 ⁿ ·1 ^o ·3 ⁿ
30	17 ^s ·15 ^o ·09 ^a	36 ⁿ ·0 ^o ·1 ⁿ	54 ^s ·23 ^o ·05 ^a	51 ⁿ ·6 ^o ·2 ⁿ	59 ^s ·02 ^o ·05 ^a	64 ⁿ ·4 ^o ·3 ⁿ
July 10	17 ^s ·09 ^o ·06 ^a	34 ⁿ ·2 ^o ·1 ⁿ	54 ^s ·21 ^o ·02 ^a	51 ⁿ ·2 ^o ·4 ⁿ	58 ^s ·98 ^o ·04 ^a	64 ⁿ ·6 ^o ·2 ⁿ
20	17 ^s ·08 ^o ·01 ^a	32 ⁿ ·2 ^o ·2 ⁿ	54 ^s ·21 ^o ·00 ^a	50 ⁿ ·7 ^o ·5 ⁿ	58 ^s ·97 ^o ·01 ^a	64 ⁿ ·6 ^o ·0 ⁿ
30	17 ^s ·12 ^o ·04 ^a	30 ⁿ ·0 ^o ·2 ⁿ	54 ^s ·25 ^o ·04 ^a	50 ⁿ ·0 ^o ·7 ⁿ	58 ^s ·98 ^o ·01 ^a	64 ⁿ ·6 ^o ·0 ⁿ
Aug. 9	17 ^s ·21 ^o ·09 ^a	27 ⁿ ·7 ^o ·2 ⁿ	54 ^s ·31 ^o ·06 ^a	49 ⁿ ·2 ^o ·8 ⁿ	59 ^s ·02 ^o ·04 ^a	64 ⁿ ·4 ^o ·2 ⁿ
19	17 ^s ·36 ^o ·18 ^a	25 ⁿ ·0 ^o ·7 ⁿ	*54 ^s ·41 ^o ·10 ^a	48 ⁿ ·1 ^o ·1 ⁿ	59 ^s ·08 ^o ·06 ^a	64 ⁿ ·1 ^o ·3 ⁿ
29	17 ^s ·54 ^o ·18 ^a	22 ⁿ ·5 ^o ·5 ⁿ	54 ^s ·53 ^o ·12 ^a	47 ⁿ ·0 ^o ·1 ⁿ	*59 ^s ·18 ^o ·10 ^a	63 ⁿ ·6 ^o ·5 ⁿ
Sept. 8	17 ^s ·77 ^o ·23 ^a	19 ⁿ ·9 ^o ·6 ⁿ	54 ^s ·69 ^o ·16 ^a	45 ⁿ ·7 ^o ·1 ⁿ	59 ^s ·30 ^o ·12 ^a	62 ⁿ ·9 ^o ·7 ⁿ
18	18 ^s ·05 ^o ·28 ^a	17 ⁿ ·4 ^o ·5 ⁿ	54 ^s ·87 ^o ·18 ^a	44 ⁿ ·3 ^o ·1 ⁿ	59 ^s ·45 ^o ·15 ^a	62 ⁿ ·0 ^o ·9 ⁿ
28	18 ^s ·37 ^o ·32 ^a	14 ⁿ ·9 ^o ·5 ⁿ	55 ^s ·09 ^o ·22 ^a	42 ⁿ ·7 ^o ·1 ⁿ	59 ^s ·64 ^o ·19 ^a	61 ⁿ ·0 ^o ·1 ⁿ
Oct. 8	18 ^s ·73 ^o ·36 ^a	12 ⁿ ·4 ^o ·5 ⁿ	55 ^s ·34 ^o ·25 ^a	41 ⁿ ·0 ^o ·1 ⁿ	59 ^s ·85 ^o ·21 ^a	59 ⁿ ·7 ^o ·1 ⁿ
18	19 ^s ·13 ^o ·40 ^a	10 ⁿ ·2 ^o ·2 ⁿ	55 ^s ·62 ^o ·28 ^a	39 ⁿ ·3 ^o ·1 ⁿ	60 ^s ·10 ^o ·25 ^a	58 ⁿ ·3 ^o ·1 ⁿ
28	19 ^s ·56 ^o ·43 ^a	8 ⁿ ·2 ^o ·2 ⁿ	55 ^s ·92 ^o ·30 ^a	37 ⁿ ·5 ^o ·1 ⁿ	60 ^s ·38 ^o ·28 ^a	56 ⁿ ·7 ^o ·1 ⁿ
Nov. 7	20 ^s ·01 ^o ·45 ^a	6 ⁿ ·5 ^o ·1 ⁿ	56 ^s ·25 ^o ·33 ^a	35 ⁿ ·6 ^o ·1 ⁿ	60 ^s ·68 ^o ·30 ^a	54 ⁿ ·9 ^o ·1 ⁿ
17	20 ^s ·48 ^o ·47 ^a	5 ⁿ ·1 ^o ·1 ⁿ	56 ^s ·59 ^o ·34 ^a	33 ⁿ ·9 ^o ·1 ⁿ	61 ^s ·00 ^o ·32 ^a	53 ⁿ ·0 ^o ·1 ⁿ
27	20 ^s ·97 ^o ·49 ^a	4 ⁿ ·0 ^o ·1 ⁿ	56 ^s ·94 ^o ·35 ^a	32 ⁿ ·2 ^o ·1 ⁿ	61 ^s ·33 ^o ·33 ^a	51 ⁿ ·0 ^o ·2 ⁿ
Dec. 7	21 ^s ·44 ^o ·47 ^a	3 ⁿ ·3 ^o ·7 ⁿ	57 ^s ·29 ^o ·35 ^a	30 ⁿ ·6 ^o ·1 ⁿ	61 ^s ·66 ^o ·33 ^a	49 ⁿ ·1 ^o ·9 ⁿ
17	21 ^s ·89 ^o ·45 ^a	3 ⁿ ·1 ^o ·2 ⁿ	57 ^s ·63 ^o ·34 ^a	29 ⁿ ·2 ^o ·1 ⁿ	61 ^s ·99 ^o ·33 ^a	47 ⁿ ·3 ^o ·1 ⁿ
27	22 ^s ·31 ^o ·42 ^a	3 ⁿ ·3 ^o ·2 ⁿ	57 ^s ·95 ^o ·32 ^a	28 ⁿ ·1 ^o ·1 ⁿ	62 ^s ·30 ^o ·31 ^a	45 ⁿ ·6 ^o ·1 ⁿ

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	γ Argus.		α URSE MAJORIS.		δ LEONIS.	
	R. A.	Dec. South.	R. A.	Dec. North.	R. A.	Dec. North.
	^h 10 ^m 38	^o 58 ⁱ 51	^h 10 ^m 53	^o 62 ⁱ 35	^h 11 ^m 5	^o 21 ⁱ 22
Jan. 1	58° 59' 0 ^s	9° 1' 3 ^s	58° 47' 5 ^s	47° 7' 0 ^s	43° 48' 5 ^s	68° 2' 0 ^s
11	59° 02' 0 ^s .43	12° 3' 3 ^s .2	59° 01' 0 ^s .54	48° 0' 0 ^s .3	43° 50' 0 ^s .32	66° 8' 1 ^s .4
21	59° 37' 0 ^s .35	15° 7' 3 ^s .4	59° 49' 0 ^s .48	48° 9' 0 ^s .9	44° 09' 0 ^s .39	65° 8' 1 ^s .0
31	59° 65' 0 ^s .28	19° 4' 3 ^s .7	59° 90' 0 ^s .41	50° 3' 1 ^s .4	44° 34' 0 ^s .25	65° 2' 0 ^s .6
Feb. 10	59° 86' 0 ^s .21	23° 2' 3 ^s .8	60° 23' 0 ^s .33	52° 2' 1 ^s .9	44° 54' 0 ^s .20	64° 9' 0 ^s .3
20	59° 99' 0 ^s .13	26° 9' 3 ^s .7	60° 46' 0 ^s .23	54° 4' 2 ^s .2	44° 70' 0 ^s .16	64° 9' 0 ^s .0
Mar. 2	60° 05' 0 ^s .06	30° 6' 3 ^s .7	60° 60' 0 ^s .14	56° 8' 2 ^s .4	44° 81' 0 ^s .11	63° 2' 0 ^s .3
12	60° 03' 0 ^s .02	34° 1' 3 ^s .5	60° 64' 0 ^s .04	59° 4' 2 ^s .6	44° 87' 0 ^s .06	63° 8' 0 ^s .6
Apr. 22	59° 94' 0 ^s .09	37° 5' 3 ^s .4	60° 58' 0 ^s .06	62° 0' 8 ^s .6	44° 89' 0 ^s .02	66° 6' 0 ^s .8
1	59° 80' 0 ^s .14	40° 5' 3 ^s .0	60° 45' 0 ^s .13	64° 5' 2 ^s .5	44° 86' 0 ^s .03	67° 5' 0 ^s .9
11	59° 61' 0 ^s .19	43° 1' 2 ^s .6	60° 25' 0 ^s .20	66° 8' 2 ^s .3	44° 81' 0 ^s .05	68° 5' 1 ^s .0
21	59° 38' 0 ^s .23	45° 4' 2 ^s .3	59° 99' 0 ^s .26	68° 8' 2 ^s .0	44° 73' 0 ^s .08	69° 5' 1 ^s .0
May 1	59° 12' 0 ^s .26	47° 2' 1 ^s .8	59° 68' 0 ^s .31	70° 5' 1 ^s .7	44° 63' 0 ^s .10	70° 5' 1 ^s .0
11	58° 83' 0 ^s .29	48° 6' 1 ^s .4	59° 35' 0 ^s .33	71° 8' 1 ^s .3	44° 52' 0 ^s .11	71° 5' 1 ^s .0
21	58° 53' 0 ^s .30	49° 5' 0 ^s .9	59° 00' 0 ^s .35	72° 6' 0 ^s .8	44° 40' 0 ^s .12	72° 3' 0 ^s .8
31	58° 23' 0 ^s .30	49° 9' 0 ^s .4	58° 65' 0 ^s .35	73° 0' 0 ^s .4	44° 28' 0 ^s .12	73° 0' 0 ^s .7
June 10	57° 92' 0 ^s .31	49° 8' 0 ^s .1	58° 31' 0 ^s .34	72° 9' 0 ^s .1	44° 17' 0 ^s .11	73° 6' 0 ^s .6
20	57° 63' 0 ^s .29	49° 2' 0 ^s .6	57° 99' 0 ^s .32	72° 3' 0 ^s .6	44° 06' 0 ^s .11	73° 9' 0 ^s .3
30	57° 36' 0 ^s .27	48° 1' 1 ^s .1	57° 71' 0 ^s .28	71° 2' 1 ^s .1	43° 97' 0 ^s .09	74° 1' 0 ^s .2
July 10	57° 11' 0 ^s .25	46° 6' 1 ^s .5	57° 46' 0 ^s .25	69° 7' 1 ^s .5	43° 88' 0 ^s .09	74° 1' 0 ^s .0
20	56° 89' 0 ^s .22	44° 7' 1 ^s .9	57° 25' 0 ^s .21	67° 8' 1 ^s .9	43° 82' 0 ^s .06	73° 9' 0 ^s .2
30	56° 72' 0 ^s .17	42° 5' 2 ^s .2	57° 09' 0 ^s .16	65° 5' 2 ^s .3	43° 77' 0 ^s .05	73° 5' 0 ^s .4
Aug. 9	56° 60' 0 ^s .12	40° 0' 2 ^s .5	56° 99' 0 ^s .10	62° 9' 2 ^s .6	43° 74' 0 ^s .03	72° 9' 0 ^s .6
19	56° 53' 0 ^s .07	37° 3' 2 ^s .7	56° 94' 0 ^s .05	60° 1' 2 ^s .8	43° 74' 0 ^s .00	72° 0' 0 ^s .9
29	56° 53' 0 ^s .00	34° 5' 2 ^s .8	56° 95' 0 ^s .01	57° 0' 3 ^s .1	43° 76' 0 ^s .02	71° 0' 1 ^s .0
Sept. 8	* 56° 60' 0 ^s .07	31° 5' 3 ^s .0	* 57° 04' 0 ^s .09	53° 5' 3 ^s .5	* 43° 82' 0 ^s .06	69° 7' 1 ^s .3
18	56° 75' 0 ^s .15	28° 9' 2 ^s .6	57° 18' 0 ^s .14	50° 2' 3 ^s .3	43° 91' 0 ^s .09	68° 2' 1 ^s .5
28	56° 96' 0 ^s .21	26° 5' 2 ^s .4	57° 40' 0 ^s .22	46° 8' 3 ^s .4	44° 03' 0 ^s .12	66° 6' 1 ^s .6
Oct. 8	57° 25' 0 ^s .29	24° 5' 2 ^s .0	57° 69' 0 ^s .29	43° 5' 3 ^s .3	44° 19' 0 ^s .16	64° 7' 1 ^s .9
18	57° 61' 0 ^s .36	22° 9' 1 ^s .6	58° 03' 0 ^s .34	40° 3' 3 ^s .2	44° 39' 0 ^s .20	62° 7' 2 ^s .0
28	58° 02' 0 ^s .41	21° 9' 1 ^s .0	58° 45' 0 ^s .42	37° 2' 3 ^s .1	44° 62' 0 ^s .23	60° 6' 2 ^s .1
Nov. 7	58° 49' 0 ^s .47	21° 4' 0 ^s .5	58° 92' 0 ^s .47	34° 5' 2 ^s .7	44° 90' 0 ^s .28	58° 4' 2 ^s .2
17	58° 99' 0 ^s .50	21° 6' 0 ^s .2	59° 45' 0 ^s .53	32° 0' 2 ^s .5	45° 20' 0 ^s .30	56° 1' 2 ^s .3
27	59° 51' 0 ^s .52	22° 4' 0 ^s .3	60° 01' 0 ^s .56	30° 0' 2 ^s .0	45° 53' 0 ^s .33	53° 9' 2 ^s .2
Dec. 7	60° 05' 0 ^s .54	23° 8' 1 ^s .4	60° 60' 0 ^s .59	28° 4' 1 ^s .6	45° 87' 0 ^s .34	51° 7' 2 ^s .2
17	60° 57' 0 ^s .52	25° 8' 2 ^s .0	61° 20' 0 ^s .60	27° 4' 1 ^s .0	46° 22' 0 ^s .35	49° 8' 1 ^s .9
27	61° 06' 0 ^s .49	28° 2' 2 ^s .4	61° 79' 0 ^s .59	26° 9' 0 ^s .5	46° 56' 0 ^s .34	48° 0' 1 ^s .8
37	61° 50' 0 ^s .44	31° 2' 3 ^s .8	62° 34' 0 ^s .55	26° 9' 0 ^s .0	46° 89' 0 ^s .33	46° 5' 1 ^s .5

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	♁ Hydræ et Crateris.		♋ LEONIS.		♌ URSE MAJORIS.	
	R. A.	Dec. South.	R. A.	Dec. North.	R. A.	Dec. North.
	^h 11 ^m 11	^o 13 ['] 55	^h 11 ^m 40	^o 15 ['] 26	^h 11 ^m 45	^o 54 ['] 33
Jan. 1	28° 28' 0 ^s	29° 5' 2 ^s	61° 22' 0 ^s	65° 7' 1 ^s	31° 38' 0 ^s	60° 4' 0 ^s
11	28° 59' 0 ^s	32° 0' 2 ^s	61° 55' 0 ^s	64° 0' 1 ^s	31° 86' 0 ^s	59° 9' 0 ^s
21	28° 87' 0 ^s	34° 4' 2 ^s	61° 85' 0 ^s	62° 6' 1 ^s	32° 31' 0 ^s	59° 9' 0 ^s
31	29° 10' 0 ^s	36° 7' 2 ^s	62° 12' 0 ^s	61° 5' 1 ^s	32° 70' 0 ^s	60° 5' 0 ^s
Feb. 10	29° 30' 0 ^s	38° 9' 2 ^s	62° 35' 0 ^s	60° 8' 0 ^s	33° 04' 0 ^s	61° 7' 1 ^s
20	29° 45' 0 ^s	41° 0' 2 ^s	62° 53' 0 ^s	60° 4' 0 ^s	33° 31' 0 ^s	63° 2' 1 ^s
Mar. 2	29° 56' 0 ^s	42° 8' 1 ^s	62° 67' 0 ^s	60° 3' 0 ^s	33° 51' 0 ^s	65° 2' 2 ^s
12	29° 62' 0 ^s	44° 3' 1 ^s	62° 76' 0 ^s	60° 5' 0 ^s	33° 64' 0 ^s	67° 4' 2 ^s
22	29° 64' 0 ^s	45° 6' 1 ^s	62° 81' 0 ^s	61° 0' 0 ^s	33° 69' 0 ^s	69° 8' 2 ^s
Apr. 1	29° 63' 0 ^s	46° 7' 0 ^s	62° 83' 0 ^s	61° 6' 0 ^s	33° 68' 0 ^s	72° 3' 2 ^s
11	29° 58' 0 ^s	47° 5' 0 ^s	62° 81' 0 ^s	62° 4' 0 ^s	33° 60' 0 ^s	74° 8' 2 ^s
21	29° 52' 0 ^s	48° 1' 0 ^s	62° 76' 0 ^s	63° 3' 0 ^s	33° 47' 0 ^s	77° 1' 2 ^s
May 1	29° 44' 0 ^s	48° 4' 0 ^s	62° 69' 0 ^s	64° 3' 0 ^s	33° 30' 0 ^s	79° 2' 2 ^s
11	29° 34' 0 ^s	48° 5' 0 ^s	62° 61' 0 ^s	65° 2' 0 ^s	33° 09' 0 ^s	81° 0' 1 ^s
21	29° 24' 0 ^s	48° 5' 0 ^s	62° 51' 0 ^s	66° 1' 0 ^s	32° 86' 0 ^s	82° 4' 1 ^s
31	29° 13' 0 ^s	48° 2' 0 ^s	62° 41' 0 ^s	66° 9' 0 ^s	32° 61' 0 ^s	83° 5' 1 ^s
June 10	29° 03' 0 ^s	47° 7' 0 ^s	62° 30' 0 ^s	67° 5' 0 ^s	32° 35' 0 ^s	84° 1' 0 ^s
20	28° 93' 0 ^s	47° 1' 0 ^s	62° 20' 0 ^s	68° 1' 0 ^s	32° 11' 0 ^s	84° 2' 0 ^s
30	28° 84' 0 ^s	46° 3' 0 ^s	62° 10' 0 ^s	68° 6' 0 ^s	31° 86' 0 ^s	83° 9' 0 ^s
July 10	28° 75' 0 ^s	45° 4' 0 ^s	62° 01' 0 ^s	68° 8' 0 ^s	31° 64' 0 ^s	83° 2' 0 ^s
20	28° 68' 0 ^s	44° 4' 0 ^s	61° 92' 0 ^s	68° 9' 0 ^s	31° 43' 0 ^s	82° 0' 1 ^s
30	28° 63' 0 ^s	43° 4' 0 ^s	61° 85' 0 ^s	68° 9' 0 ^s	31° 25' 0 ^s	80° 4' 1 ^s
Aug. 9	28° 59' 0 ^s	42° 3' 0 ^s	61° 80' 0 ^s	68° 6' 0 ^s	31° 11' 0 ^s	78° 5' 1 ^s
19	28° 57' 0 ^s	41° 2' 0 ^s	61° 76' 0 ^s	68° 2' 0 ^s	31° 00' 0 ^s	76° 2' 2 ^s
29	28° 58' 0 ^s	40° 3' 0 ^s	61° 75' 0 ^s	67° 5' 0 ^s	30° 93' 0 ^s	73° 6' 2 ^s
Sept. 8	28° 63' 0 ^s	39° 4' 0 ^s	61° 76' 0 ^s	66° 6' 0 ^s	30° 90' 0 ^s	70° 7' 2 ^s
18	28° 71' 0 ^s	38° 7' 0 ^s	61° 82' 0 ^s	65° 4' 1 ^s	30° 94' 0 ^s	67° 3' 2 ^s
28	28° 83' 0 ^s	38° 3' 0 ^s	61° 90' 0 ^s	64° 1' 1 ^s	31° 02' 0 ^s	64° 1' 2 ^s
Oct. 8	28° 98' 0 ^s	38° 2' 0 ^s	62° 02' 0 ^s	62° 5' 1 ^s	31° 17' 0 ^s	60° 8' 2 ^s
18	29° 17' 0 ^s	38° 5' 0 ^s	62° 18' 0 ^s	60° 7' 1 ^s	31° 37' 0 ^s	57° 4' 2 ^s
28	29° 40' 0 ^s	39° 1' 0 ^s	62° 38' 0 ^s	58° 7' 2 ^s	31° 64' 0 ^s	54° 1' 2 ^s
Nov. 7	29° 67' 0 ^s	40° 0' 0 ^s	62° 62' 0 ^s	56° 6' 2 ^s	31° 96' 0 ^s	51° 0' 2 ^s
17	29° 96' 0 ^s	41° 3' 0 ^s	62° 89' 0 ^s	54° 4' 2 ^s	32° 34' 0 ^s	48° 0' 2 ^s
27	30° 28' 0 ^s	42° 9' 0 ^s	63° 19' 0 ^s	52° 1' 2 ^s	32° 76' 0 ^s	45° 3' 2 ^s
Dec. 7	30° 62' 0 ^s	44° 9' 0 ^s	63° 52' 0 ^s	49° 9' 2 ^s	33° 22' 0 ^s	43° 0' 2 ^s
17	30° 96' 0 ^s	47° 0' 0 ^s	63° 85' 0 ^s	47° 7' 2 ^s	33° 70' 0 ^s	41° 2' 1 ^s
27	31° 29' 0 ^s	49° 3' 0 ^s	64° 19' 0 ^s	45° 7' 2 ^s	34° 19' 0 ^s	39° 8' 0 ^s

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	β Chamaeleontis.		α^1 Crucis.		β Corvi.	
	R. A.	Dec. South.	R. A.	Dec. South.	R. A.	Dec. South.
	^h 12 ^m 9	^o 78 ['] 25	^h 12 ^m 17	^o 62 ['] 13	^h 12 ^m 26	^o 22 ['] 31
Jan. 1	14 ^s 13 ^s 1 ^s 18	52 ^s 9 ^s 1 ^s 9	52 ^s 60 ^s 0 ^s 57	9 ^s 1 ^s 2 ^s 0	6 ^s 91 ^s 0 ^s 24	16 ^s 0 ^s 2 ^s 3
11	15 31 1 09	54 8 2 4	53 17 0 54	11 1 2 5	7 25 0 33	18 3 2 3
21	16 40 0 97	57 2 2 9	53 71 0 49	13 6 2 9	7 58 0 30	20 6 2 4
31	17 37 0 83	60 1 3 2	54 20 0 43	16 5 3 2	7 88 0 27	23 0 2 4
Feb. 10	18 20 0 69	63 3 3 5	54 63 0 36	19 7 3 4	8 15 0 23	25 4 2 3
20	18 89 0 52	66 8 3 8	54 99 0 28	23 1 3 5	8 38 0 19	27 7 2 2
Mar. 2	19 41 0 35	70 6 3 8	55 27 0 21	26 6 3 6	8 57 0 14	29 9 1 9
12	19 76 0 19	74 4 3 8	55 48 0 14	30 2 3 5	8 71 0 11	31 8 1 8
22	19 95 0 02	78 2 3 8	55 62 0 06	33 7 3 4	8 82 0 07	33 6 1 6
Apr. 1	19 97 0 13	82 0 3 7	55 68 0 00	37 1 3 2	8 89 0 03	35 2 1 4
11	19 84 0 28	85 7 3 4	55 68 0 06	40 3 3 0	8 92 0 01	36 6 1 1
21	19 56 0 41	89 1 3 1	55 62 0 12	43 3 2 7	8 93 0 03	37 7 0 9
May 1	19 15 0 54	92 2 2 8	55 50 0 17	46 0 2 4	8 90 0 04	38 6 0 6
11	18 61 0 64	95 0 2 4	55 33 0 21	48 4 2 0	8 86 0 06	39 2 0 4
21	17 97 0 73	97 4 2 0	55 12 0 25	50 4 1 5	8 80 0 08	39 6 0 2
31	17 24 0 81	99 4 1 4	54 87 0 28	51 9 1 1	8 72 0 09	39 8 0 0
June 10	16 43 0 86	100 8 0 9	54 59 0 30	53 0 0 6	8 63 0 10	39 8 0 3
20	15 57 0 89	101 7 0 4	54 29 0 31	53 6 0 1	8 53 0 11	39 5 0 4
30	14 68 0 89	102 1 0 2	53 98 0 33	53 7 0 2	8 42 0 11	39 1 0 7
July 10	13 79 0 87	101 9 0 7	53 65 0 31	53 4 0 9	8 31 0 11	38 4 0 8
20	12 92 0 82	101 2 1 2	53 34 0 30	52 5 1 2	8 20 0 11	37 6 1 0
30	12 10 0 78	99 9 1 7	53 04 0 28	51 2 1 7	8 09 0 09	36 6 1 1
Aug. 9	11 37 0 63	98 2 2 2	52 76 0 23	49 5 2 0	8 00 0 08	35 5 1 2
19	10 74 0 49	96 0 2 5	52 53 0 18	47 5 2 4	7 92 0 06	34 3 1 2
29	10 25 0 33	93 5 2 8	52 35 0 12	45 1 2 5	7 86 0 04	33 1 1 1
Sept. 8	9 92 0 14	90 7 2 9	52 23 0 04	42 6 2 7	7 82 0 00	32 0 1 1
18	9 78 0 05	87 8 3 2	52 19 0 04	39 9 3 0	7 82 0 04	30 9 1 0
28	9 83 0 27	84 5 2 9	52 23 0 14	36 9 2 5	7 86 0 09	29 9 0 7
Oct. 8	10 10 0 48	81 6 2 8	52 37 0 22	34 4 2 3	7 95 0 12	29 2 0 5
18	10 58 0 67	78 8 2 4	52 59 0 30	32 1 2 0	8 07 0 18	28 7 0 1
28	11 25 0 84	76 4 2 0	52 89 0 40	30 1 1 6	8 25 0 22	28 6 0 2
Nov. 7	12 09 1 00	74 4 1 5	53 29 0 47	28 5 1 1	8 47	28 9 0 6
17	13 09 1 11	72 9 0 9	53 76 0 52	27 4 0 5	8 7	28 9 0 0
27	14 20 1 20	72 0 0 4	54 28 0 57	26 9 0 1	9 4	28 9 0 3
Dec. 7	15 40 1 24	71 6 0 4	54 85 0 60	27 0 0 6	9 2	28 9 0 6
17	16 64 1 25	72 0 0 9	55 45 0 60	27 6 1 2	9	28 9 0 6
27	17 89 1 21	72 9 1 6	56 05 0 59	28 8 1 8		
37	19 10	74 5	56 64	30 6		

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	12 Canum Venaticorum.		α VIRGINIS. (Spica)		γ URSE MAJORIS.	
	R. A.	Dec. North.	R. A.	Dec. South.	R. A.	Dec. North.
	12 ^h 48 ^m	39° 9'	13 ^h 16 ^m	10° 20'	13 ^h 41 ^m	50° 5'
Jan. 1	38° 81 ^s	62° 1 ^s	53° 35 ^s	10° 1 ^s	18° 86 ^s	50° 6 ^s
11	39° 20 ^s 0 ³⁹	60° 5 ^s 1 ⁶	53° 69 ^s 0 ³⁴	12° 1 ^s 2 ⁰	19° 29 ^s 0 ⁴³	48° 7 ^s 1 ⁰
21	39° 58 ^s 0 ³⁸	59° 4 ^s 1 ¹	54° 02 ^s 0 ³³	14° 2 ^s 2 ¹	19° 73 ^s 0 ⁴⁴	47° 4 ^s 1 ⁰
31	39° 93 ^s 0 ³⁵	58° 9 ^s 0 ⁵	54° 34 ^s 0 ³²	16° 1 ^s 1 ⁹	20° 15 ^s 0 ⁴²	46° 7 ^s 0 ⁰
	0 ³²	0 ⁰	0 ²⁹	1 ⁹	0 ⁴¹	0 ⁰
Feb. 10	40° 25 ^s	58° 9 ^s 0 ⁵	54° 63 ^s	18° 0 ^s	20° 56 ^s	46° 6 ^s 0 ⁰
20	40° 53 ^s 0 ²⁸	59° 4 ^s 0 ⁹	54° 89 ^s 0 ²⁶	19° 6 ^s 1 ⁶	20° 92 ^s 0 ³⁶	47° 1 ^s 0 ⁰
Mar. 2	40° 77 ^s 0 ²⁴	60° 3 ^s 0 ⁹	55° 11 ^s 0 ²²	21° 1 ^s 1 ⁵	21° 25 ^s 0 ³³	48° 2 ^s 1 ⁰
12	40° 95 ^s 0 ¹⁸	61° 7 ^s 1 ⁴	55° 30 ^s 0 ¹⁹	22° 4 ^s 1 ³	21° 52 ^s 0 ²⁷	49° 7 ^s 1 ⁰
	0 ¹³	1 ⁷	0 ¹⁵	1 ⁰	0 ²¹	2 ⁰
22	41° 08 ^s	63° 4 ^s 2 ⁰	55° 45 ^s	23° 4 ^s 0 ⁸	21° 73 ^s 0 ¹⁶	51° 7 ^s 2 ⁰
Apr. 1	41° 17 ^s 0 ⁰⁹	65° 4 ^s 2 ¹	55° 57 ^s 0 ¹²	24° 2 ^s 0 ⁸	21° 89 ^s 0 ¹⁰	54° 0 ^s 2 ⁰
11	41° 20 ^s 0 ⁰⁸	67° 5 ^s 2 ¹	55° 66 ^s 0 ⁰⁹	24° 7 ^s 0 ⁵	21° 99 ^s 0 ⁰⁴	56° 6 ^s 2 ⁰
21	41° 19 ^s 0 ⁰¹	69° 6 ^s 2 ¹	55° 71 ^s 0 ⁰⁵	25° 1 ^s 0 ⁴	22° 03 ^s 0 ⁰⁴	59° 3 ^s 2 ⁰
	0 ⁰⁴	2 ²	0 ⁰³	0 ²	0 ⁰¹	2 ⁶
May 1	41° 15 ^s	71° 8 ^s 2 ⁰	55° 74 ^s	25° 3 ^s 0 ⁰	22° 02 ^s 0 ⁰⁵	61° 9 ^s 2 ⁶
11	41° 07 ^s 0 ⁰⁸	73° 8 ^s 1 ⁸	55° 74 ^s 0 ⁰⁰	25° 3 ^s 0 ⁰	21° 97 ^s 0 ¹⁰	64° 5 ^s 2 ⁵
21	40° 96 ^s 0 ¹¹	75° 6 ^s 1 ⁸	55° 72 ^s 0 ⁰²	25° 2 ^s 0 ¹	21° 87 ^s 0 ¹⁴	67° 0 ^s 2 ²
31	40° 84 ^s 0 ¹²	77° 2 ^s 1 ⁶	55° 68 ^s 0 ⁰⁴	25° 0 ^s 0 ²	21° 73 ^s 0 ¹⁷	69° 2 ^s 1 ⁸
	0 ¹⁵	1 ³	0 ⁰⁵	0 ³	0 ¹⁷	1 ⁸
June 10	40° 69 ^s	78° 5 ^s 0 ⁹	55° 63 ^s	24° 7 ^s 0 ⁴	21° 56 ^s 0 ²⁰	71° 0 ^s 1 ⁵
20	40° 54 ^s 0 ¹⁵	79° 4 ^s 0 ⁷	55° 55 ^s 0 ⁰⁸	24° 3 ^s 0 ⁵	21° 36 ^s 0 ²²	72° 5 ^s 1 ¹
30	40° 38 ^s 0 ¹⁶	80° 1 ^s 0 ²	55° 47 ^s 0 ¹⁰	23° 8 ^s 0 ⁶	21° 14 ^s 0 ²³	73° 6 ^s 0 ⁶
July 10	40° 21 ^s 0 ¹⁷	80° 3 ^s 0 ²	55° 37 ^s 0 ¹⁰	23° 2 ^s 0 ⁶	20° 91 ^s 0 ²⁴	74° 2 ^s 0 ²
	0 ¹⁶	0 ²	0 ¹⁰	0 ⁶	0 ²⁴	0 ²
20	40° 05 ^s 0 ¹⁶	80° 1 ^s 0 ⁵	55° 27 ^s 0 ¹¹	22° 6 ^s 0 ⁶	20° 67 ^s 0 ²⁴	74° 4 ^s 0 ²
30	39° 89 ^s 0 ¹⁵	79° 6 ^s 0 ⁹	55° 16 ^s 0 ¹¹	22° 0 ^s 0 ⁷	20° 43 ^s 0 ²⁵	74° 2 ^s 0 ⁸
Aug. 9	39° 74 ^s 0 ¹⁸	78° 7 ^s 1 ²	55° 05 ^s 0 ¹⁰	21° 3 ^s 0 ⁶	20° 18 ^s 0 ²³	73° 4 ^s 1 ²
19	39° 61 ^s 0 ¹¹	77° 5 ^s 1 ⁷	54° 95 ^s 0 ⁰⁹	20° 7 ^s 0 ⁶	19° 95 ^s 0 ²¹	72° 2 ^s 1 ⁶
	0 ⁰⁸	1 ⁹	0 ⁰⁷	0 ⁶	0 ²¹	1 ⁶
29	39° 50 ^s	75° 8 ^s 2 ³	54° 86 ^s 0 ⁰⁵	20° 1 ^s 0 ⁴	19° 74 ^s 0 ¹⁶	70° 6 ^s 2 ⁰
Sept. 8	39° 42 ^s 0 ⁰⁵	73° 9 ^s 2 ³	54° 79 ^s 0 ⁰⁵	19° 6 ^s 0 ⁴	19° 55 ^s 0 ¹¹	68° 6 ^s 2 ⁴
18	39° 37 ^s 0 ⁰¹	71° 6 ^s 2 ⁵	54° 74 ^s 0 ⁰¹	19° 2 ^s 0 ²	19° 39 ^s 0 ¹¹	66° 2 ^s 2 ⁸
28	39° 36 ^s 0 ⁰⁴	69° 1 ^s 3 ⁰	54° 73 ^s 0 ⁰²	19° 0 ^s 0 ¹	19° 28 ^s 0 ⁰⁷	63° 4 ^s 3 ⁰
Oct. 8	39° 40 ^s 0 ⁰⁸	66° 1 ^s 3 ⁰	54° 75 ^s 0 ⁰⁸	18° 9 ^s 0 ²	19° 21 ^s 0 ⁰⁰	60° 4 ^s 3 ⁶
18	39° 48 ^s 0 ¹⁴	63° 1 ^s 3 ⁰	*54° 83 ^s 0 ¹¹	19° 1 ^s 0 ²	*19° 21 ^s 0 ⁰⁶	56° 8 ^s 3 ⁴
28	39° 62 ^s 0 ²⁰	60° 1 ^s 3 ²	54° 94 ^s 0 ¹⁷	19° 6 ^s 0 ⁷	19° 27 ^s 0 ¹²	53° 4 ^s 3 ⁵
Nov. 7	39° 82 ^s 0 ²⁴	56° 9 ^s 3 ¹	55° 11 ^s 0 ²¹	20° 3 ^s 1 ¹	19° 39 ^s 0 ¹⁹	49° 9 ^s 3 ⁶
	0 ²⁸	3 ⁰	0 ²⁵	1 ⁸	0 ²⁵	3 ⁴
17	40° 06 ^s 0 ³³	53° 8 ^s 3 ⁰	55° 32 ^s 0 ²⁸	21° 4 ^s 1 ⁵	19° 83 ^s 0 ³¹	42° 9 ^s 3 ³
27	40° 34 ^s 0 ³⁶	48° 0 ^s 2 ⁶	55° 57 ^s 0 ³¹	22° 7 ^s 1 ⁸	20° 14 ^s 0 ³⁶	39° 6 ^s 2 ⁹
Dec. 7	40° 67 ^s 0 ³⁸	45° 4 ^s 2 ²	55° 85 ^s 0 ³³	24° 2 ^s 1 ⁹	20° 50 ^s 0 ³⁹	36° 7 ^s 2 ⁶
17	41° 03 ^s 0 ³⁹	43° 2 ^s 1 ⁸	56° 16 ^s 0 ³⁴	26° 0 ^s 1 ⁹	20° 89 ^s 0 ⁴²	34° 1 ^s 2 ¹
	0 ³⁸	1 ⁸	0 ³⁴	1 ⁹	0 ⁴²	2 ⁰
27	41° 41 ^s	41° 4 ^s	56° 49 ^s	27° 9 ^s	21° 31 ^s	32° 0 ^s
37	41° 80 ^s		56° 83 ^s	29° 8 ^s		

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

	γ Bootis.		β Centauri.		α BOOTIS. (Arcturus)		
	R. A.	Dec. North.	R. A.	Dec. South.	R. A.	Dec. North.	
	^h 13 ^m 47	^o 19 ['] 11	^h 13 ^m 52	^o 59 ['] 36	^h 14 ^m 8	^o 19 ['] 59	
L	10 ^s 29	22 ^s 2	44 ^s 22	14 ^s 8	27 ^s 85	71 ^s 7	
11	10 ^s 62 ⁰ .33	20 ^s 1 ² .1	44 ^s 80 ⁰ .58	15 ^s 6 ⁰ .8	28 ^s 18 ⁰ .33	69 ^s 5 ² .2	
21	10 ^s 96 ⁰ .34	18 ^s 3 ¹ .8	45 ^s 38 ⁰ .58	16 ^s 9 ¹ .3	28 ^s 51 ⁰ .33	67 ^s 5 ² .0	
31	11 ^s 29 ⁰ .33	16 ^s 8 ¹ .5	45 ^s 94 ⁰ .56	18 ^s 7 ¹ .8	28 ^s 84 ⁰ .33	66 ^s 0 ¹ .5	
b.	10	11 ^s 59 ⁰ .30	15 ^s 8 ¹ .0	46 ^s 47 ⁰ .53	20 ^s 8 ² .1	29 ^s 15 ⁰ .31	64 ^s 8 ¹ .2
20	11 ^s 88 ⁰ .29	15 ^s 2 ⁰ .6	46 ^s 96 ⁰ .49	23 ^s 3 ² .5	29 ^s 44 ⁰ .29	64 ^s 1 ⁰ .7	
ar.	2	12 ^s 13 ⁰ .25	15 ^s 0 ⁰ .2	47 ^s 40 ⁰ .44	25 ^s 9 ² .6	29 ^s 71 ⁰ .27	63 ^s 8 ⁰ .3
12	12 ^s 34 ⁰ .21	15 ^s 2 ⁰ .2	47 ^s 78 ⁰ .38	28 ^s 8 ² .9	29 ^s 94 ⁰ .23	64 ^s 0 ⁰ .2	
		18 ^s 8 ⁰ .7	48 ^s 11 ⁰ .33	31 ^s 8 ³ .0	30 ^s 13 ⁰ .19	64 ^s 5 ⁰ .5	
pr.	22	12 ^s 52 ⁰ .18	15 ^s 9 ⁰ .7	48 ^s 11 ⁰ .33	31 ^s 8 ³ .0	30 ^s 13 ⁰ .16	64 ^s 5 ⁰ .9
1	12 ^s 66 ⁰ .14	16 ^s 8 ⁰ .9	48 ^s 38 ⁰ .27	34 ^s 8 ³ .0	30 ^s 29 ⁰ .16	65 ^s 4 ⁰ .9	
11	12 ^s 77 ⁰ .11	18 ^s 0 ¹ .2	48 ^s 38 ⁰ .20	37 ^s 8 ³ .0	30 ^s 42 ⁰ .13	66 ^s 6 ¹ .2	
21	12 ^s 84 ⁰ .07	19 ^s 3 ¹ .3	48 ^s 58 ⁰ .15	40 ^s 7 ³ .9	30 ^s 51 ⁰ .09	68 ^s 0 ¹ .4	
May	1	12 ^s 88 ⁰ .04	20 ^s 8 ¹ .5	48 ^s 82 ⁰ .09	43 ^s 5 ² .8	30 ^s 57 ⁰ .06	69 ^s 5 ¹ .5
11	12 ^s 89 ⁰ .01	22 ^s 4 ¹ .6	48 ^s 85 ⁰ .03	46 ^s 1 ² .6	30 ^s 57 ⁰ .02	71 ^s 2 ¹ .7	
21	12 ^s 88 ⁰ .01	23 ^s 9 ¹ .5	48 ^s 83 ⁰ .02	48 ^s 5 ² .4	30 ^s 59 ⁰ .00	72 ^s 8 ¹ .6	
31	12 ^s 83 ⁰ .05	25 ^s 4 ¹ .5	48 ^s 75 ⁰ .08	50 ^s 7 ² .2	30 ^s 57 ⁰ .02	74 ^s 3 ¹ .5	
June	10	12 ^s 77 ⁰ .06	26 ^s 8 ¹ .4	48 ^s 62 ⁰ .13	52 ^s 4 ¹ .7	30 ^s 51 ⁰ .06	75 ^s 8 ¹ .5
20	12 ^s 69 ⁰ .08	28 ^s 0 ¹ .2	48 ^s 45 ⁰ .17	53 ^s 9 ¹ .5	30 ^s 44 ⁰ .07	77 ^s 1 ¹ .3	
30	12 ^s 59 ⁰ .10	29 ^s 0 ¹ .0	48 ^s 23 ⁰ .22	54 ^s 9 ¹ .0	30 ^s 35 ⁰ .09	78 ^s 2 ¹ .1	
July	10	12 ^s 48 ⁰ .11	29 ^s 9 ⁰ .9	47 ^s 98 ⁰ .25	55 ^s 5 ⁰ .6	30 ^s 23 ⁰ .12	79 ^s 1 ⁰ .9
		30 ^s 4 ⁰ .5	47 ^s 71 ⁰ .27	55 ^s 7 ⁰ .2	30 ^s 11 ⁰ .12	79 ^s 8 ⁰ .7	
20	12 ^s 36 ⁰ .12	30 ^s 4 ⁰ .5	47 ^s 71 ⁰ .27	55 ^s 7 ⁰ .2	30 ^s 11 ⁰ .12	79 ^s 8 ⁰ .7	
30	12 ^s 23 ⁰ .13	30 ^s 8 ⁰ .4	47 ^s 42 ⁰ .29	55 ^s 4 ⁰ .3	29 ^s 97 ⁰ .14	80 ^s 1 ⁰ .3	
Aug.	9	12 ^s 10 ⁰ .13	30 ^s 8 ⁰ .0	47 ^s 12 ⁰ .30	54 ^s 7 ⁰ .7	29 ^s 83 ⁰ .14	80 ^s 2 ⁰ .1
19	11 ^s 97 ⁰ .13	30 ^s 6 ⁰ .2	46 ^s 82 ⁰ .30	53 ^s 5 ¹ .2	29 ^s 69 ⁰ .14	80 ^s 0 ⁰ .2	
		30 ^s 1 ⁰ .5	46 ^s 55 ⁰ .27	52 ^s 0 ¹ .5	29 ^s 55 ⁰ .14	79 ^s 6 ⁰ .4	
Sept.	8	11 ^s 85 ⁰ .12	30 ^s 1 ⁰ .5	46 ^s 55 ⁰ .27	52 ^s 0 ¹ .5	29 ^s 55 ⁰ .14	79 ^s 6 ⁰ .4
8	11 ^s 74 ⁰ .11	29 ^s 3 ⁰ .8	46 ^s 32 ⁰ .23	50 ^s 1 ¹ .9	29 ^s 42 ⁰ .13	78 ^s 8 ⁰ .8	
18	11 ^s 66 ⁰ .08	28 ^s 3 ¹ .0	46 ^s 13 ⁰ .19	48 ^s 0 ² .1	29 ^s 32 ⁰ .10	77 ^s 8 ¹ .0	
28	11 ^s 60 ⁰ .06	26 ^s 9 ¹ .4	46 ^s 01 ⁰ .12	45 ^s 7 ² .3	29 ^s 24 ⁰ .08	76 ^s 4 ¹ .4	
		25 ^s 3 ¹ .6	45 ^s 96 ⁰ .05	43 ^s 2 ² .5	29 ^s 20 ⁰ .04	74 ^s 8 ¹ .4	
Oct.	8	11 ^s 58 ⁰ .02	25 ^s 3 ¹ .6	45 ^s 96 ⁰ .05	43 ^s 2 ² .5	29 ^s 20 ⁰ .04	74 ^s 8 ¹ .4
18	11 ^s 60 ⁰ .02	23 ^s 4 ¹ .9	45 ^s 99 ⁰ .03	40 ^s 8 ² .4	29 ^s 19 ⁰ .01	72 ^s 9 ¹ .4	
28	11 ^s 68 ⁰ .08	21 ^s 1 ² .3	46 ^s 12 ⁰ .13	38 ^s 3 ² .5	29 ^s 24 ⁰ .05	70 ^s 4 ² .1	
Nov.	7	11 ^s 80 ⁰ .12	18 ^s 8 ² .3	46 ^s 34 ⁰ .22	36 ^s 2 ² .1	29 ^s 33 ⁰ .09	68 ^s 0 ² .1
		16 ^s 3 ² .5	46 ^s 64 ⁰ .30	34 ^s 4 ¹ .8	29 ^s 48 ⁰ .0		
17	11 ^s 97 ⁰ .17	16 ^s 3 ² .5	46 ^s 64 ⁰ .30	34 ^s 4 ¹ .8	29 ^s 48 ⁰ .0		
27	12 ^s 18 ⁰ .21	13 ^s 7 ² .6	47 ^s 03 ⁰ .39	33 ^s 0 ¹ .4	29 ^s 67 ⁰ .1		
Dec.	7	12 ^s 43 ⁰ .25	11 ^s 1 ² .6	47 ^s 48 ⁰ .45	32 ^s 0 ¹ .0	29 ^s 90 ⁰ .1	
17	12 ^s 72 ⁰ .29	8 ^s 5 ² .6	47 ^s 99 ⁰ .51	31 ^s 6 ⁰ .4	30 ^s 1 ⁰ .1		
		6 ^s 1 ² .4	48 ^s 54 ⁰ .55	31 ^s 6 ⁰ .0	30 ^s 1 ⁰ .1		
27	13 ^s 04 ⁰ .32	6 ^s 1 ² .4	48 ^s 54 ⁰ .55	31 ^s 6 ⁰ .0	30 ^s 1 ⁰ .1		
37	13 ^s 37 ⁰ .33	8 ^s 8 ² .8	49 ^s 11 ⁰ .57	32 ^s 2 ⁰ .6	30 ^s 1 ⁰ .1		

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α Centauri.		ε Bootis.		α Libræ.	
	R. A.	Dec. South.	R. A.	Dec. North.	R. A.	Dec. South.
	^h 14 ^m 28	[°] 60 ['] 10	^h 14 ^m 38	[°] 27 ['] 44	^h 14 ^m 42	[°] 15 ['] 22
Jan. 1	55 ^s 61 ^s	29 ["] 0 ["]	5 ^s 42 ^s	20 ["] 6 ["]	9 ^s 17 ^s	53 ["] 1 ["]
11	56 ^s 18 ^s 0 ^s 57	29 ["] 3 ["] 0 ["] 3	5 ^s 75 ^s 0 ^s 33	18 ["] 3 ["] 2 ["] 3	9 ^s 50 ^s 0 ^s 33	54 ["] 6 ["] 1 ["] 3
21	56 ^s 76 ^s 0 ^s 58	30 ["] 1 ["] 0 ["] 8	6 ^s 09 ^s 0 ^s 34	16 ["] 3 ["] 2 ["] 0	9 ^s 84 ^s 0 ^s 34	56 ["] 3 ["] 1 ["] 7
31	57 ^s 33 ^s 0 ^s 57	31 ["] 3 ["] 1 ["] 2	6 ^s 43 ^s 0 ^s 34	14 ["] 7 ["] 1 ["] 6	10 ^s 18 ^s 0 ^s 34	57 ["] 9 ["] 1 ["] 6
	0 ^s 56	1 ["] 6	0 ^s 33	1 ["] 1	0 ^s 33	1 ["] 6
Feb. 10	57 ^s 89 ^s 0 ^s 52	32 ["] 9 ["] 2 ["] 0	6 ^s 76 ^s 0 ^s 32	13 ["] 6 ["] 0 ["] 6	10 ^s 51 ^s 0 ^s 31	59 ["] 5 ["] 1 ["] 3
20	58 ^s 41 ^s 0 ^s 49	34 ["] 9 ["] 2 ["] 3	7 ^s 08 ^s 0 ^s 29	13 ["] 0 ["] 0 ["] 1	10 ^s 82 ^s 0 ^s 28	61 ["] 0 ["] 1 ["] 3
Mar. 2	58 ^s 90 ^s 0 ^s 43	37 ["] 2 ["] 2 ["] 4	7 ^s 37 ^s 0 ^s 27	12 ["] 9 ["] 0 ["] 5	11 ^s 10 ^s 0 ^s 26	62 ["] 3 ["] 1 ["] 2
12	59 ^s 33 ^s 0 ^s 39	39 ["] 6 ["] 2 ["] 7	7 ^s 64 ^s 0 ^s 22	13 ["] 4 ["] 0 ["] 8	11 ^s 36 ^s 0 ^s 24	63 ["] 5 ["] 1 ["] 0
22	59 ^s 72 ^s 0 ^s 33	42 ["] 3 ["] 2 ["] 7	7 ^s 86 ^s 0 ^s 20	14 ["] 2 ["] 1 ["] 3	11 ^s 60 ^s 0 ^s 20	64 ["] 5 ["] 0 ["] 3
Apr. 1	60 ^s 05 ^s 0 ^s 27	45 ["] 0 ["] 2 ["] 8	8 ^s 06 ^s 0 ^s 16	15 ["] 5 ["] 1 ["] 6	11 ^s 80 ^s 0 ^s 18	65 ["] 4 ["] 0 ["] 6
11	60 ^s 32 ^s 0 ^s 21	47 ["] 8 ["] 2 ["] 8	8 ^s 22 ^s 0 ^s 12	17 ["] 1 ["] 1 ["] 3	11 ^s 98 ^s 0 ^s 14	66 ["] 0 ["] 0 ["] 5
21	60 ^s 53 ^s 0 ^s 16	50 ["] 6 ["] 2 ["] 8	8 ^s 34 ^s 0 ^s 08	19 ["] 0 ["] 2 ["] 0	12 ^s 12 ^s 0 ^s 12	66 ["] 5 ["] 0 ["] 4
May 1	60 ^s 69 ^s 0 ^s 09	53 ["] 4 ["] 2 ["] 6	8 ^s 42 ^s 0 ^s 06	21 ["] 0 ["] 2 ["] 1	12 ^s 24 ^s 0 ^s 09	66 ["] 9 ["] 0 ["] 1
11	60 ^s 78 ^s 0 ^s 03	56 ["] 0 ["] 2 ["] 4	8 ^s 48 ^s 0 ^s 01	23 ["] 1 ["] 2 ["] 1	12 ^s 33 ^s 0 ^s 06	67 ["] 0 ["] 0 ["] 1
21	60 ^s 81 ^s 0 ^s 03	58 ["] 4 ["] 2 ["] 3	8 ^s 49 ^s 0 ^s 01	25 ["] 2 ["] 2 ["] 1	12 ^s 39 ^s 0 ^s 03	67 ["] 1 ["] 0 ["] 0
31	60 ^s 78 ^s 0 ^s 08	60 ["] 7 ["] 2 ["] 0	8 ^s 48 ^s 0 ^s 04	27 ["] 3 ["] 1 ["] 9	12 ^s 42 ^s 0 ^s 00	67 ["] 1 ["] 0 ["] 1
June 10	60 ^s 70 ^s 0 ^s 14	62 ["] 7 ["] 1 ["] 6	8 ^s 44 ^s 0 ^s 07	29 ["] 2 ["] 1 ["] 7	12 ^s 42 ^s 0 ^s 02	67 ["] 0 ["] 0 ["] 2
20	60 ^s 56 ^s 0 ^s 19	64 ["] 3 ["] 1 ["] 4	8 ^s 37 ^s 0 ^s 10	30 ["] 9 ["] 1 ["] 5	12 ^s 40 ^s 0 ^s 05	66 ["] 8 ["] 0 ["] 3
30	60 ^s 37 ^s 0 ^s 24	65 ["] 7 ["] 0 ["] 9	8 ^s 27 ^s 0 ^s 11	32 ["] 4 ["] 1 ["] 2	12 ^s 35 ^s 0 ^s 08	66 ["] 5 ["] 0 ["] 4
July 10	60 ^s 13 ^s 0 ^s 28	66 ["] 6 ["] 0 ["] 6	8 ^s 16 ^s 0 ^s 14	33 ["] 6 ["] 0 ["] 9	12 ^s 27 ^s 0 ^s 09	66 ["] 1 ["] 0 ["] 4
20	59 ^s 85 ^s 0 ^s 30	67 ["] 2 ["] 0 ["] 1	8 ^s 02 ^s 0 ^s 16	34 ["] 5 ["] 0 ["] 6	12 ^s 18 ^s 0 ^s 12	65 ["] 7 ["] 0 ["] 5
30	59 ^s 55 ^s 0 ^s 32	67 ["] 3 ["] 0 ["] 4	7 ^s 86 ^s 0 ^s 16	35 ["] 1 ["] 0 ["] 3	12 ^s 06 ^s 0 ^s 13	65 ["] 2 ["] 0 ["] 5
Aug. 9	59 ^s 23 ^s 0 ^s 33	66 ["] 9 ["] 0 ["] 8	7 ^s 70 ^s 0 ^s 17	35 ["] 4 ["] 0 ["] 2	11 ^s 93 ^s 0 ^s 13	64 ["] 7 ["] 0 ["] 5
19	58 ^s 90 ^s 0 ^s 32	66 ["] 1 ["] 1 ["] 2	7 ^s 53 ^s 0 ^s 17	35 ["] 2 ["] 0 ["] 4	11 ^s 80 ^s 0 ^s 14	64 ["] 2 ["] 0 ["] 7
29	58 ^s 58 ^s 0 ^s 29	64 ["] 9 ["] 1 ["] 5	7 ^s 36 ^s 0 ^s 15	34 ["] 8 ["] 0 ["] 8	11 ^s 66 ^s 0 ^s 13	63 ["] 5 ["] 0 ["] 5
Sept. 8	58 ^s 29 ^s 0 ^s 25	63 ["] 4 ["] 1 ["] 9	7 ^s 21 ^s 0 ^s 14	34 ["] 0 ["] 1 ["] 2	11 ^s 53 ^s 0 ^s 11	63 ["] 0 ["] 0 ["] 5
18	58 ^s 04 ^s 0 ^s 20	61 ["] 5 ["] 2 ["] 2	7 ^s 07 ^s 0 ^s 12	32 ["] 8 ["] 1 ["] 5	11 ^s 42 ^s 0 ^s 09	62 ["] 5 ["] 0 ["] 4
28	57 ^s 84 ^s 0 ^s 12	59 ["] 3 ["] 2 ["] 8	6 ^s 95 ^s 0 ^s 08	31 ["] 3 ["] 1 ["] 8	11 ^s 33 ^s 0 ^s 06	62 ["] 1 ["] 0 ["] 4
Oct. 8	57 ^s 72 ^s 0 ^s 05	57 ["] 0 ["] 2 ["] 4	6 ^s 87 ^s 0 ^s 05	29 ["] 5 ["] 2 ["] 2	11 ^s 27 ^s 0 ^s 01	61 ["] 7 ["] 0 ["] 2
18	57 ^s 67 ^s 0 ^s 04	54 ["] 6 ["] 2 ["] 4	6 ^s 82 ^s 0 ^s 01	27 ["] 3 ["] 2 ["] 4	11 ^s 26 ^s 0 ^s 03	61 ["] 5 ["] 0 ["] 0
28	57 ^s 71 ^s 0 ^s 15	52 ["] 2 ["] 2 ["] 5	6 ^s 83 ^s 0 ^s 06	24 ["] 9 ["] 2 ["] 9	11 ^s 29 ^s 0 ^s 09	61 ["] 5 ["] 0 ["] 2
Nov. 7	* 57 ^s 86 ^s 0 ^s 23	49 ["] 7 ["] 2 ["] 1	* 6 ^s 89 ^s 0 ^s 11	22 ["] 0 ["] 2 ["] 8	* 11 ^s 38 ^s 0 ^s 13	61 ["] 8 ["] 0 ["] 4
17	58 ^s 09 ^s 0 ^s 32	47 ["] 6 ["] 1 ["] 7	7 ^s 00 ^s 0 ^s 16	19 ["] 2 ["] 2 ["] 0	11 ^s 51 ^s 0 ^s 18	62 ["] 2 ["] 0 ["] 7
27	58 ^s 41 ^s 0 ^s 40	45 ["] 9 ["] 1 ["] 4	7 ^s 16 ^s 0 ^s 21	16 ["] 2 ["] 2 ["] 9	11 ^s 69 ^s 0 ^s 23	62 ["] 9 ["] 0 ["] 9
Dec. 7	58 ^s 81 ^s 0 ^s 46	44 ["] 5 ["] 0 ["] 9	7 ^s 37 ^s 0 ^s 25	13 ["] 3 ["] 2 ["] 9	11 ^s 92 ^s 0 ^s 27	63 ["] 8 ["] 1 ["] 2
17	59 ^s 27 ^s 0 ^s 52	43 ["] 6 ["] 0 ["] 5	7 ^s 62 ^s 0 ^s 29	10 ["] 4 ["] 2 ["] 8	12 ^s 19 ^s 0 ^s 30	65 ["] 0 ["] 1 ["] 3
27	59 ^s 79 ^s 0 ^s 56	43 ["] 1 ["] 0 ["] 1	7 ^s 91 ^s 0 ^s 32	7 ["] 6 ["] 2 ["] 5	12 ^s 49 ^s 0 ^s 32	66 ["] 3 ["] 1 ["] 5
37	60 ^s 35 ^s 0 ^s 56	43 ["] 2 ["] 0 ["] 1	8 ^s 23 ^s 0 ^s 32	5 ["] 1 ["] 2 ["] 5	12 ^s 81 ^s 0 ^s 32	67 ["] 8 ["] 1 ["] 5

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	β URSAE MINORIS.		β LIBRÆ.		α CORONÆ BOREALIS.	
	R. A.	Dec. North.	R. A.	Dec. South.	R. A.	Dec. North.
	h m	° ′	h m	° ′	h m	° ′
	14 51	74 47	15 8	8 47	15 27	27 14
Jan. 1	12 ^s 33 ^a	39 ^u 5 ⁿ	30 ^s 86 ^a	48 ^u 9 ⁿ	59 ^s 78 ^a	45 ^u 2 ⁿ
11	13 ^s 12 ^a 0 ^{.77}	37 ^u 2 ⁿ 2 ^{.3}	31 ^s 18 ^a 0 ^{.32}	50 ^u 5 ⁿ 1 ^{.6}	60 ^s 08 ^a 0 ^{.30}	42 ^u 6 ⁿ 2 ^{.6}
21	13 ^s 95 ^a 0 ^{.83}	35 ^u 5 ⁿ 1 ^{.7}	31 ^s 50 ^a 0 ^{.32}	52 ^u 2 ⁿ 1 ^{.7}	60 ^s 40 ^a 0 ^{.32}	40 ^u 4 ⁿ 2 ^{.2}
31	14 ^s 83 ^a 0 ^{.88}	34 ^u 5 ⁿ 1 ^{.0}	31 ^s 83 ^a 0 ^{.33}	53 ^u 7 ⁿ 1 ^{.8}	60 ^s 73 ^a 0 ^{.33}	38 ^u 6 ⁿ 1 ^{.8}
		0 4		1 5		1 4
Feb. 10	15 ^s 71 ^a 0 ^{.86}	34 ^u 1 ⁿ 0 ^{.4}	32 ^s 15 ^a 0 ^{.31}	55 ^u 2 ⁿ 1 ^{.3}	61 ^s 06 ^a 0 ^{.32}	37 ^u 2 ⁿ 0 ^{.9}
20	16 ^s 57 ^a 0 ^{.81}	34 ^u 5 ⁿ 0 ^{.9}	32 ^s 46 ^a 0 ^{.29}	56 ^u 5 ⁿ 1 ^{.1}	61 ^s 38 ^a 0 ^{.31}	36 ^u 3 ⁿ 0 ^{.3}
Mar. 2	17 ^s 38 ^a 0 ^{.73}	35 ^u 4 ⁿ 1 ^{.6}	32 ^s 73 ^a 0 ^{.27}	57 ^u 6 ⁿ 0 ^{.8}	61 ^s 69 ^a 0 ^{.30}	36 ^u 0 ⁿ 0 ^{.2}
12	18 ^s 11 ^a 0 ^{.62}	37 ^u 0 ⁿ 2 ^{.1}	33 ^s 02 ^a 0 ^{.25}	58 ^u 4 ⁿ 0 ^{.7}	61 ^s 99 ^a 0 ^{.26}	36 ^u 2 ⁿ 0 ^{.6}
22	18 ^s 73 ^a 0 ^{.50}	39 ^u 1 ⁿ 2 ^{.6}	33 ^s 27 ^a 0 ^{.22}	59 ^u 1 ⁿ 0 ^{.4}	62 ^s 25 ^a 0 ^{.24}	36 ^u 8 ⁿ 1 ^{.1}
Apr. 1	19 ^s 23 ^a 0 ^{.36}	41 ^u 7 ⁿ 2 ^{.8}	33 ^s 49 ^a 0 ^{.19}	59 ^u 5 ⁿ 0 ^{.2}	62 ^s 49 ^a 0 ^{.20}	37 ^u 9 ⁿ 1 ^{.5}
11	19 ^s 59 ^a 0 ^{.23}	44 ^u 5 ⁿ 3 ^{.1}	33 ^s 68 ^a 0 ^{.17}	59 ^u 7 ⁿ 0 ^{.1}	62 ^s 69 ^a 0 ^{.17}	39 ^u 4 ⁿ 1 ^{.9}
21	19 ^s 82 ^a 0 ^{.07}	47 ^u 6 ⁿ 3 ^{.2}	33 ^s 83 ^a 0 ^{.14}	59 ^u 8 ⁿ 0 ^{.2}	62 ^s 86 ^a 0 ^{.14}	41 ^u 3 ⁿ 2 ^{.0}
May 1	19 ^s 89 ^a 0 ^{.06}	50 ^u 8 ⁿ 3 ^{.2}	33 ^s 99 ^a 0 ^{.10}	59 ^u 6 ⁿ 0 ^{.2}	63 ^s 00 ^a 0 ^{.10}	43 ^u 3 ⁿ 2 ^{.2}
11	19 ^s 83 ^a 0 ^{.20}	54 ^u 0 ⁿ 3 ^{.0}	34 ^s 09 ^a 0 ^{.09}	59 ^u 4 ⁿ 0 ^{.4}	63 ^s 10 ^a 0 ^{.07}	45 ^u 5 ⁿ 2 ^{.3}
21	19 ^s 63 ^a 0 ^{.33}	57 ^u 0 ⁿ 2 ^{.8}	34 ^s 18 ^a 0 ^{.05}	59 ^u 0 ⁿ 0 ^{.4}	63 ^s 17 ^a 0 ^{.04}	47 ^u 8 ⁿ 2 ^{.2}
31	19 ^s 30 ^a 0 ^{.45}	59 ^u 8 ⁿ 2 ^{.6}	34 ^s 23 ^a 0 ^{.02}	58 ^u 6 ⁿ 0 ^{.5}	63 ^s 21 ^a 0 ^{.00}	50 ^u 0 ⁿ 2 ^{.2}
June 10	18 ^s 85 ^a 0 ^{.55}	62 ^u 4 ⁿ 2 ^{.1}	34 ^s 25 ^a 0 ^{.01}	58 ^u 1 ⁿ 0 ^{.5}	63 ^s 21 ^a 0 ^{.04}	52 ^u 2 ⁿ 2 ^{.0}
20	18 ^s 30 ^a 0 ^{.63}	64 ^u 5 ⁿ 1 ^{.7}	34 ^s 24 ^a 0 ^{.03}	57 ^u 6 ⁿ 0 ^{.6}	63 ^s 17 ^a 0 ^{.06}	54 ^u 2 ⁿ 1 ^{.9}
30	17 ^s 67 ^a 0 ^{.71}	66 ^u 2 ⁿ 1 ^{.3}	34 ^s 21 ^a 0 ^{.06}	57 ^u 0 ⁿ 0 ^{.5}	63 ^s 11 ^a 0 ^{.09}	56 ^u 1 ⁿ 1 ^{.6}
July 10	16 ^s 96 ^a 0 ^{.76}	67 ^u 5 ⁿ 0 ^{.7}	34 ^s 15 ^a 0 ^{.09}	56 ^u 5 ⁿ 0 ^{.6}	63 ^s 02 ^a 0 ^{.13}	57 ^u 7 ⁿ 1 ^{.3}
20	16 ^s 20 ^a 0 ^{.79}	68 ^u 2 ⁿ 0 ^{.2}	34 ^s 06 ^a 0 ^{.11}	55 ^u 9 ⁿ 0 ^{.5}	62 ^s 89 ^a 0 ^{.14}	59 ^u 0 ⁿ 1 ^{.0}
30	15 ^s 41 ^a 0 ^{.82}	68 ^u 4 ⁿ 0 ^{.3}	33 ^s 95 ^a 0 ^{.12}	55 ^u 4 ⁿ 0 ^{.5}	62 ^s 75 ^a 0 ^{.16}	60 ^u 0 ⁿ 0 ^{.6}
Aug. 9	14 ^s 59 ^a 0 ^{.81}	68 ^u 1 ⁿ 0 ^{.8}	33 ^s 83 ^a 0 ^{.14}	54 ^u 9 ⁿ 0 ^{.5}	62 ^s 59 ^a 0 ^{.18}	60 ^u 6 ⁿ 0 ^{.3}
19	13 ^s 78 ^a 0 ^{.79}	67 ^u 3 ⁿ 1 ^{.4}	33 ^s 69 ^a 0 ^{.14}	54 ^u 4 ⁿ 0 ^{.3}	62 ^s 41 ^a 0 ^{.19}	60 ^u 9 ⁿ 0 ^{.1}
29	12 ^s 99 ^a 0 ^{.76}	65 ^u 9 ⁿ 1 ^{.8}	33 ^s 55 ^a 0 ^{.13}	54 ^u 1 ⁿ 0 ^{.4}	62 ^s 22 ^a 0 ^{.18}	60 ^u 8 ⁿ 0 ^{.4}
Sept. 8	12 ^s 23 ^a 0 ^{.69}	64 ^u 1 ⁿ 2 ^{.3}	33 ^s 42 ^a 0 ^{.13}	53 ^u 7 ⁿ 0 ^{.3}	62 ^s 04 ^a 0 ^{.18}	60 ^u 4 ⁿ 0 ^{.8}
18	11 ^s 54 ^a 0 ^{.62}	61 ^u 8 ⁿ 2 ^{.7}	33 ^s 29 ^a 0 ^{.11}	53 ^u 4 ⁿ 0 ^{.1}	61 ^s 86 ^a 0 ^{.15}	59 ^u 6 ⁿ 1 ^{.1}
28	10 ^s 92 ^a 0 ^{.53}	59 ^u 1 ⁿ 3 ^{.1}	33 ^s 18 ^a 0 ^{.08}	53 ^u 3 ⁿ 0 ^{.0}	61 ^s 71 ^a 0 ^{.13}	58 ^u 5 ⁿ 1 ^{.6}
Oct. 8	10 ^s 39 ^a 0 ^{.41}	56 ^u 0 ⁿ 3 ^{.3}	33 ^s 10 ^a 0 ^{.04}	53 ^u 3 ⁿ 0 ^{.1}	61 ^s 58 ^a 0 ^{.10}	56 ^u 9 ⁿ 1 ^{.9}
18	9 ^s 98 ^a 0 ^{.28}	52 ^u 7 ⁿ 3 ^{.7}	33 ^s 06 ^a 0 ^{.00}	53 ^u 4 ⁿ 0 ^{.3}	61 ^s 48 ^a 0 ^{.05}	55 ^u 0 ⁿ 2 ^{.1}
28	9 ^s 70 ^a 0 ^{.14}	49 ^u 0 ⁿ 4 ^{.0}	33 ^s 06 ^a 0 ^{.05}	53 ^u 7 ⁿ 0 ^{.7}	61 ^s 43 ^a 0 ^{.00}	52 ^u 9 ⁿ 2 ^{.4}
Nov. 7	9 ^s 56 ^a 0 ^{.03}	45 ^u 0 ⁿ 3 ^{.8}	33 ^s 11 ^a 0 ^{.11}	54 ^u 4 ⁿ 0 ^{.8}	61 ^s 43 ^a 0 ^{.05}	50 ^u 5 ⁿ 3 ^{.0}
17	9 ^s 59 ^a 0 ^{.18}	41 ^u 2 ⁿ 3 ^{.8}	33 ^s 22 ^a 0 ^{.15}	55 ^u 2 ⁿ 1 ^{.1}	61 ^s 48 ^a 0 ^{.11}	47 ^u 5 ⁿ 2 ^{.8}
27	9 ^s 77 ^a 0 ^{.33}	37 ^u 4 ⁿ 3 ^{.6}	33 ^s 37 ^a 0 ^{.20}	56 ^u 3 ⁿ 1 ^{.0}	61 ^s 59 ^a 0 ^{.16}	44 ^u 7 ⁿ 3 ^{.2}
Dec. 7	10 ^s 10 ^a 0 ^{.47}	33 ^u 8 ⁿ 3 ^{.3}	33 ^s 57 ^a 0 ^{.24}	57 ^u 3 ⁿ 1 ^{.4}	61 ^s 75 ^a 0 ^{.21}	41 ^u 7 ⁿ 3 ^{.2}
17	10 ^s 57 ^a 0 ^{.61}	30 ^u 5 ⁿ 3 ^{.0}	33 ^s 81 ^a 0 ^{.28}	58 ^u 7 ⁿ 1 ^{.5}	61 ^s 96 ^a 0 ^{.25}	38 ^u 8 ⁿ 3 ^{.2}
27	11 ^s 18 ^a	27 ^u 5 ⁿ	34 ^s 00 ^a	60 ^u 2 ⁿ	62 ^s 21 ^a	

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α SERPENTIS.		ζ Ursæ Minoris.		β ¹ Scorpii.	
	R. A.	Dec. North.	R. A.	Dec. North.	R. A.	Dec. South.
	^h 15 ^m 36	^o 6 ['] 55	^h 15 ^m 49	^o 78 ['] 16	^h 15 ^m 56	^o 19 ['] 22
Jan. 1	29° 29' ^s	28° 9' ⁿ	45° 53' ^s	17° 7' ⁿ	15° 45' ^s	3° 3' ⁿ
11	29° 58' 0 ^{.29}	26° 8' 2 ^{.1}	46° 30' 0 ^{.77}	15° 0' 2 ^{.7}	15° 76' 0 ^{.31}	4° 3' 1 ^{.4}
21	29° 88' 0 ^{.30}	24° 9' 1 ^{.9}	47° 20' 0 ^{.90}	12° 7' 2 ^{.3}	16° 08' 0 ^{.32}	5° 4' 1 ^{.5}
31	30° 19' 0 ^{.21}	23° 2' 1 ^{.7}	48° 21' 1 ^{.01}	11° 0' 1 ^{.7}	16° 42' 0 ^{.34}	6° 5' 1 ^{.6}
Feb. 10	0 ^{.32}	1 ^{.4}	1 ^{.08}	1 ^{.1}	0 ^{.33}	1 ^{.1}
20	30° 51' 0 ^{.31}	21° 8' 1 ^{.1}	49° 29' 1 ^{.10}	9° 9' 0 ^{.4}	16° 75' 0 ^{.32}	7° 6' 1 ^{.1}
Mar. 2	30° 82' 0 ^{.29}	20° 7' 0 ^{.8}	50° 39' 1 ^{.08}	9° 5' 0 ^{.3}	17° 08' 0 ^{.33}	8° 7' 1 ^{.1}
12	31° 11' 0 ^{.28}	19° 9' 0 ^{.4}	51° 47' 1 ^{.04}	9° 8' 0 ^{.9}	17° 41' 0 ^{.31}	9° 7' 0 ^{.1}
	0 ^{.26}	0 ^{.0}	0 ^{.95}	1 ^{.6}	0 ^{.28}	0 ^{.1}
22	31° 65' 0 ^{.23}	19° 5' 0 ^{.3}	53° 46' 0 ^{.82}	12° 3' 2 ^{.0}	18° 00' 0 ^{.27}	11° 4' 0 ^{.6}
Apr. 1	31° 88' 0 ^{.21}	19° 8' 0 ^{.6}	54° 28' 0 ^{.67}	14° 3' 2 ^{.5}	18° 27' 0 ^{.25}	12° 0' 0 ^{.5}
11	32° 09' 0 ^{.18}	20° 4' 0 ^{.9}	54° 95' 0 ^{.51}	16° 8' 2 ^{.9}	18° 52' 0 ^{.22}	12° 5' 0 ^{.4}
21	0 ^{.15}	1 ^{.1}	0 ^{.32}	3 ^{.1}	0 ^{.19}	0 ^{.3}
May 1	32° 42' 0 ^{.12}	22° 4' 1 ^{.2}	55° 79' 0 ^{.14}	22° 8' 2 ^{.2}	18° 93' 0 ^{.17}	13° 2' 0 ^{.2}
11	32° 54' 0 ^{.10}	23° 6' 1 ^{.3}	55° 93' 0 ^{.03}	26° 0' 2 ^{.3}	19° 10' 0 ^{.13}	13° 4' 0 ^{.1}
21	32° 64' 0 ^{.06}	24° 9' 1 ^{.4}	55° 90' 0 ^{.23}	29° 3' 2 ^{.1}	19° 23' 0 ^{.11}	13° 5' 0 ^{.1}
31	0 ^{.04}	1 ^{.4}	0 ^{.39}	3 ^{.0}	0 ^{.07}	0 ^{.0}
June 10	32° 74' 0 ^{.00}	27° 7' 1 ^{.3}	55° 28' 0 ^{.56}	35° 4' 2 ^{.7}	19° 41' 0 ^{.03}	13° 6' 0 ^{.1}
20	32° 74' 0 ^{.03}	29° 0' 1 ^{.2}	54° 72' 0 ^{.71}	38° 1' 2 ^{.3}	19° 44' 0 ^{.01}	13° 5' 0 ^{.0}
30	32° 71' 0 ^{.05}	30° 2' 1 ^{.1}	54° 01' 0 ^{.83}	40° 4' 2 ^{.0}	19° 45' 0 ^{.04}	13° 5' 0 ^{.2}
July 10	0 ^{.08}	1 ^{.0}	0 ^{.94}	1 ^{.5}	0 ^{.06}	0 ^{.2}
20	32° 58' 0 ^{.11}	32° 3' 0 ^{.8}	52° 24' 1 ^{.02}	43° 9' 1 ^{.0}	19° 35' 0 ^{.10}	13° 1' 0 ^{.2}
30	32° 47' 0 ^{.13}	33° 1' 0 ^{.7}	51° 22' 1 ^{.09}	44° 9' 0 ^{.3}	19° 25' 0 ^{.12}	12° 9' 0 ^{.3}
Aug. 9	32° 34' 0 ^{.14}	33° 8' 0 ^{.4}	50° 13' 1 ^{.12}	45° 4' 0 ^{.0}	19° 13' 0 ^{.14}	12° 6' 0 ^{.3}
19	0 ^{.15}	0 ^{.3}	1 ^{.15}	0 ^{.5}	0 ^{.15}	0 ^{.4}
29	32° 05' 0 ^{.16}	34° 5' 0 ^{.0}	47° 86' 1 ^{.12}	44° 9' 1 ^{.0}	18° 84' 0 ^{.16}	11° 9' 0 ^{.5}
Sept. 8	31° 89' 0 ^{.14}	34° 5' 0 ^{.2}	46° 74' 1 ^{.09}	43° 9' 1 ^{.5}	18° 68' 0 ^{.16}	11° 4' 0 ^{.4}
18	31° 75' 0 ^{.13}	34° 3' 0 ^{.4}	45° 65' 1 ^{.02}	42° 4' 2 ^{.0}	18° 52' 0 ^{.14}	11° 0' 0 ^{.5}
28	0 ^{.11}	0 ^{.7}	0 ^{.92}	2 ^{.4}	0 ^{.11}	0 ^{.4}
Oct. 8	31° 51' 0 ^{.07}	33° 2' 0 ^{.8}	43° 71' 0 ^{.81}	38° 0' 2 ^{.8}	18° 27' 0 ^{.08}	10° 1' 0 ^{.4}
18	31° 44' 0 ^{.04}	32° 4' 1 ^{.2}	42° 90' 0 ^{.66}	35° 2' 2 ^{.8}	18° 19' 0 ^{.05}	9° 7' 0 ^{.3}
28	31° 40' 0 ^{.01}	31° 2' 1 ^{.4}	42° 24' 0 ^{.50}	32° 1' 2 ^{.4}	18° 14' 0 ^{.01}	9° 4' 0 ^{.1}
Nov. 7	0 ^{.07}	1 ^{.8}	0 ^{.31}	2 ^{.6}	0 ^{.06}	0 ^{.0}
17	31° 48' 0 ^{.11}	28° 0' 1 ^{.8}	41° 43' 0 ^{.12}	25° 1' 4 ^{.1}	18° 21' 0 ^{.12}	9° 3' 0 ^{.2}
27	31° 59' 0 ^{.16}	26° 2' 2 ^{.0}	41° 31' 0 ^{.11}	21° 0' 2 ^{.6}	18° 33' 0 ^{.17}	9° 5' 0 ^{.4}
Dec. 7	31° 75' 0 ^{.21}	24° 2' 2 ^{.1}	41° 42' 0 ^{.32}	17° 4' 2 ^{.6}	18° 50' 0 ^{.21}	9° 9' 0 ^{.5}
17	0 ^{.24}	2 ^{.1}	0 ^{.49}	2 ^{.3}	0 ^{.25}	0 ^{.8}
27	32° 20' 0 ^{.27}	20° 0' 2 ^{.1}	42° 23' 0 ^{.69}	10° 5' 2 ^{.3}	18° 96' 0 ^{.29}	11° 2' 0 ^{.9}
37	32° 47'	17° 9'	42° 92'	7° 5'	19° 25'	12° 1'

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	♁ OPHIUCHI.		♋ SCORPII. (Antares)		♁ Draconis.	
	R. A.	Dec. South.	R. A.	Dec. South.	R. A.	Dec. North.
	h ^h m ^m 16 6	° ′ 3 16	h ^h m ^m 16 19	° ′ 26 4	h ^h m ^m 16 21	° ′ 61 51
Jan. 1	4 ^s 20 ^s	60 ^h 6 ^h	43 ^s 65 ^s	32 ^h 8 ^h	49 ^s 80 ^s	65 ^h 3 ^h
11	4 48 0 ²⁸	62 2 1 ⁶	43 95 0 ³⁰	33 3 0 ⁵	50 15 0 ³⁵	62 2 3 ¹
21	4 77 0 ²⁹	63 7 1 ⁵	44 28 0 ³³	33 9 0 ⁶	50 56 0 ⁴¹	59 5 2 ⁷
31	5 08 0 ³¹	65 2 1 ⁵	44 62 0 ³⁴	34 7 0 ⁸	51 03 0 ⁴⁷	57 3 2 ²
		1 3	0 35	0 8	0 50	1 7
Feb. 10	5 40	66 5	44 97	35 5	51 53	55 6
20	5 71 0 ³¹	67 6 1 ¹	45 32 0 ³⁵	36 3 0 ⁸	52 04 0 ⁵¹	54 6 1 ⁰
Mar. 2	6 01 0 ³⁰	68 4 0 ⁸	45 66 0 ³⁴	37 2 0 ⁹	52 56 0 ⁵²	54 3 0 ³
12	6 30 0 ²⁹	69 0 0 ⁶	45 99 0 ³³	38 0 0 ⁸	53 06 0 ⁵⁰	54 7 0 ⁴
		0 3	0 31	0 8	0 47	1 0
22	6 58	69 3	46 30	38 8	53 53	55 7
Apr. 1	6 83 0 ²⁵	69 3 0 ⁰	46 60 0 ³⁰	39 5 0 ⁷	53 97 0 ⁴⁴	57 3 1 ⁶
11	7 07 0 ²⁴	69 1 0 ²	46 88 0 ²⁸	40 1 0 ⁶	54 35 0 ³⁸	59 4 2 ¹
21	7 28 0 ²¹	68 7 0 ⁴	47 13 0 ²⁵	40 7 0 ⁶	54 67 0 ³²	62 0 2 ⁶
		0 6	0 23	0 6	0 25	2 9
May 1	7 46	68 1	47 36	41 3	54 92	64 9
11	7 62 0 ¹⁶	67 3 0 ⁸	47 56 0 ²⁰	41 7 0 ⁴	55 10 0 ¹⁸	68 1 3 ²
21	7 75 0 ¹³	66 5 0 ⁸	47 72 0 ¹⁶	42 1 0 ⁴	55 21 0 ¹¹	71 3 8 ²
31	7 85 0 ¹⁰	65 6 0 ⁹	47 86 0 ¹⁴	42 5 0 ⁴	55 25 0 ⁰⁴	74 6 3 ³
		0 9	0 09	0 4	0 05	8 2
June 10	7 92	64 7	47 95	42 9	55 20	77 8
20	7 96 0 ⁰⁴	63 7 1 ⁰	48 02 0 ⁰⁷	43 2 0 ³	55 09 0 ¹¹	80 8 3 ⁰
30	7 96 0 ⁰⁰	62 8 0 ⁹	48 04 0 ⁰²	43 4 0 ²	54 90 0 ¹⁹	83 6 2 ⁸
July 10	7 93 0 ⁰³	62 0 0 ⁸	48 02 0 ⁰²	43 6 0 ²	54 66 0 ²⁴	86 1 2 ⁵
		0 7	0 05	0 0	0 31	2 0
20	7 87	61 3	47 97	43 6	54 35	88 1
30	7 78 0 ⁰⁹	60 6 0 ⁷	47 88 0 ⁰⁹	43 7 0 ¹	53 99 0 ³⁶	89 7 1 ⁶
Aug. 9	7 67 0 ¹¹	60 0 0 ⁶	47 88 0 ¹²	43 7 0 ⁰	53 59 0 ⁴⁰	89 7 1 ²
19	7 53 0 ¹⁴	59 5 0 ⁵	47 76 0 ¹⁴	43 5 0 ²	53 16 0 ⁴³	90 9 0 ⁷
		0 4	0 17	0 8	0 45	0 2
29	7 38	59 1	47 45	43 2	52 71	91 8
Sept. 8	7 23 0 ¹⁵	58 9 0 ²	47 28 0 ¹⁷	42 9 0 ³	52 25 0 ⁴⁶	91 4 0 ⁴
18	7 08 0 ¹⁵	58 8 0 ¹	47 11 0 ¹⁷	42 4 0 ⁵	51 80 0 ⁴⁵	91 4 0 ⁹
28	6 93 0 ¹⁵	58 8 0 ⁰	47 11 0 ¹⁶	42 4 0 ⁶	51 80 0 ⁴⁴	90 5 1 ³
		0 2	0 13	0 6	0 40	1 9
Oct. 8	6 81	59 0	46 82	41 2	50 96	87 3
18	6 72 0 ⁰⁹	59 3 0 ³	46 71 0 ¹¹	40 6 0 ⁶	50 61 0 ³⁵	85 0 2 ³
28	6 67 0 ⁰⁵	59 9 0 ⁶	46 65 0 ⁰⁶	40 0 0 ⁶	50 32 0 ²⁹	82 3 2 ⁷
Nov. 7	6 66 0 ⁰¹	60 6 0 ⁷	46 63 0 ⁰²	39 5 0 ⁵	50 10 0 ²²	79 2 3 ¹
		1 0	0 04	0 5	0 15	3 3
17	6 70	61 6	46 67	39 0	49 95	75 9
27	* 6 80 0 ¹⁰	62 8 1 ²	* 46 77 0 ¹⁰	38 7 0 ³	* 49 90 0 ⁰⁵	71 9 4 ⁰
Dec. 7	6 94 0 ¹⁴	64 2 1 ⁴	46 92 0 ¹⁵	38 6 0 ¹	49 95 0 ⁰⁵	68 2 8 ⁰
17	7 12 0 ¹⁸	65 6 1 ⁴	47 12 0 ²⁰	38 6 0 ⁰	50 09 0 ¹⁴	64 6 3 ⁰
		1 6	0 24	0 2	0 23	8 4
27	7 35	67 2	47 36	38 8	50 32	61 0
37	7 61 0 ²⁶	68 8 1 ⁶	47 65 0 ²⁹	39 3 0 ⁵	50 63 0 ³¹	57 7 3 ⁵

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α Trianguli Australis.		ε Ursæ Minoris.	
	R. A.	Dec. South.	R. A.	Dec. North.
	16 ^h	68 ^o	17 ^h	82 ^o
Jan. 1	31 ^m 58 ^s 55 ^a	43 ['] 31 ["] 4 ["]	2 ^m 11 ^s 56 ^a	16 ['] 58 ["] 0 ["]
11	59 17 0.62	29 8 1.6	12 22 0.66	54 8 3.3
21	59 86 0.69	28 7 1.1	13 16 0.94	52 0 2.8
31	60 60 0.74	27 9 0.8	14 34 1.18	49 5 2.5
Feb. 10	0.77	0.3	1.37	1.8
20	61 37 0.79	27 6 0.0	15 71 1.51	47 7 1.3
Mar. 2	62 16 0.78	27 6 0.5	17 22 1.59	46 4 0.7
12	62 94 0.76	28 1 0.9	18 81 1.61	45 7 0.0
	0.74	1.2	1.57	0.7
22	64 44 0.70	30 2 1.5	21 99 1.47	46 4 1.3
Apr. 1	65 14 0.65	31 7 1.8	23 46 1.33	47 7 1.8
11	65 79 0.59	33 5 2.1	24 79 1.12	49 5 2.3
21	66 38 0.53	35 6 2.3	25 91 0.90	51 8 2.7
May 1	66 91 0.44	37 9 2.4	26 81 0.65	54 5 3.0
11	67 35 0.36	40 3 2.5	27 46 0.37	57 5 3.2
21	67 71 0.28	42 8 2.5	27 83 0.08	60 7 3.2
31	67 99 0.18	45 3 2.6	27 91 0.19	63 9 3.3
June 10	68 17 0.08	47 9 2.4	27 72 0.48	67 2 3.1
20	68 25 0.02	50 3 2.3	27 24 0.73	70 3 3.0
30	68 23 0.12	52 6 2.2	26 51 0.98	73 3 2.7
July 10	68 11 0.21	54 8 1.8	25 53 1.21	76 0 2.4
20	67 90 0.29	56 6 1.6	24 32 1.39	78 4 1.9
30	67 61 0.37	58 2 1.1	22 93 1.56	80 3 1.6
Aug. 9	67 24 0.43	59 3 0.7	21 37 1.68	81 9 1.1
19	66 81 0.47	60 0 0.3	19 69 1.78	83 0 0.6
29	66 34 0.49	60 3 0.2	17 91 1.82	83 6 0.1
Sept. 8	65 85 0.48	60 1 0.7	16 09 1.84	83 7 0.4
18	65 37 0.47	59 4 1.1	14 25 1.81	83 3 0.8
28	64 90 0.41	58 3 1.6	12 44 1.74	82 5 1.4
Oct. 8	64 49 0.34	56 7 1.9	10 70 1.62	81 1 1.3
18	64 15 0.24	54 8 2.3	9 08 1.46	79 3 2.3
28	63 91 0.14	52 5 2.5	7 62 1.26	77 0 2.7
Nov. 7	63 77 0.01	50 0 2.6	6 36 1.03	74 3 3.0
17	63 76 0.12	47 4 2.6	5 33 0.76	71 3 3.2
27	63 88 0.25	44 8 2.8	4 57 0.48	68 1 3.8
Dec. 7	64 13 0.36	42 0 2.3	4 09 0.18	64 3 3.5
17	64 49 0.48	39 7 2.1	3 96 0.20	60 8 3.5
27	64 97 0.57	37 6 1.8	4 16 0.51	57 3 3.3
37	31 65 54	43 35 8	2 4 67	16 54 0

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α HERCULIS.		σ Octantis.	
	R. A.	Dec. North.	R. A.	Dec. South.
	^h 17	^o 14	^h 17	^o 89
	^m ^s	['] ["]	^m ^s	['] ["]
Jan. 1	7 26 ^m 33 ^s	34 23 ['] 1 ["]	14 40 ^m 26 ^s	15 54 ['] 0 ["]
11	26 55 0 ^{.22}	20 8 2 ^{.3}	14 52 48 12 ^{.22}	51 3 2 ^{.4}
21	26 79 0 ^{.24}	18 8 2 ^{.0}	15 7 28 14 ^{.80}	48 9 1 ^{.8}
31	27 07 0 ^{.28}	16 9 1 ^{.9}	15 24 12 16 ^{.84}	47 1 1 ^{.8}
Feb. 10	27 36 0 ^{.29}	15 3 1 ^{.6}	15 42 65 18 ^{.53}	45 6 1 ^{.5}
20	27 66 0 ^{.30}	14 1 1 ^{.2}	16 2 28 19 ^{.63}	44 6 1 ^{.0}
Mar. 2	27 96 0 ^{.30}	13 3 0 ^{.8}	16 22 61 20 ^{.33}	44 1 0 ^{.5}
12	28 26 0 ^{.30}	12 9 0 ^{.4}	16 43 11 20 ^{.50}	44 2 0 ^{.1}
22	28 55 0 ^{.29}	12 8 0 ^{.1}	17 3 40 20 ^{.29}	44 7 0 ^{.5}
Apr. 1	28 83 0 ^{.28}	13 4 0 ^{.6}	17 23 01 19 ^{.61}	45 7 1 ^{.0}
11	29 10 0 ^{.27}	14 3 0 ^{.9}	17 41 54 18 ^{.53}	47 2 1 ^{.5}
21	29 35 0 ^{.25}	15 6 1 ^{.3}	17 58 60 17 ^{.06}	49 0 1 ^{.3}
May 1	29 58 0 ^{.23}	17 1 1 ^{.5}	18 13 95 15 ^{.35}	51 2 2 ^{.2}
11	29 78 0 ^{.20}	18 8 1 ^{.7}	18 27 17 13 ^{.22}	53 7 2 ^{.5}
21	29 95 0 ^{.17}	20 8 2 ^{.0}	18 38 03 10 ^{.86}	56 5 2 ^{.8}
31	30 09 0 ^{.14}	22 8 2 ^{.0}	18 46 33 8 ^{.30}	15 59 4 2 ^{.9}
June 10	30 20 0 ^{.11}	24 8 2 ^{.0}	18 51 78 5 ^{.45}	16 2 5 3 ^{.1}
20	30 28 0 ^{.08}	26 8 2 ^{.0}	18 54 54 2 ^{.76}	5 5 3 ^{.0}
30	30 31 0 ^{.03}	28 7 1 ^{.9}	18 54 29 0 ^{.25}	8 6 3 ^{.1}
July 10	30 31 0 ^{.00}	30 5 1 ^{.8}	18 51 15 3 ^{.14}	11 5 2 ^{.9}
20	30 27 0 ^{.04}	32 2 1 ^{.7}	18 45 24 5 ^{.91}	14 2 2 ^{.7}
30	30 20 0 ^{.07}	33 6 1 ^{.4}	18 36 73 8 ^{.51}	16 7 2 ^{.5}
Aug. 9	30 09 0 ^{.11}	34 8 1 ^{.2}	18 25 92 10 ^{.81}	18 7 2 ^{.0}
19	29 95 0 ^{.14}	35 7 0 ^{.9}	18 13 12 12 ^{.80}	20 3 1 ^{.6}
29	29 79 0 ^{.16}	36 3 0 ^{.6}	17 58 89 14 ^{.23}	21 3 1 ^{.0}
Sept. 8	29 62 0 ^{.17}	36 7 0 ^{.4}	17 43 58 15 ^{.31}	21 9 0 ^{.6}
18	29 44 0 ^{.18}	36 8 0 ^{.1}	17 27 92 15 ^{.66}	21 8 0 ^{.1}
28	29 26 0 ^{.18}	36 6 0 ^{.2}	17 12 27 15 ^{.65}	21 1 0 ^{.7}
8	29 09 0 ^{.17}	36 1 0 ^{.5}	16 57 58 14 ^{.69}	19 9 1 ^{.2}
Oct. 18	28 95 0 ^{.14}	35 2 0 ^{.9}	16 44 26 13 ^{.32}	18 1 1 ^{.8}
28	28 83 0 ^{.12}	34 1 1 ^{.1}	16 32 87 11 ^{.39}	15 8 2 ^{.3}
Nov. 7	28 75 0 ^{.08}	32 7 1 ^{.4}	16 24 08 8 ^{.79}	13 1 2 ^{.7}
17	28 72 0 ^{.03}	31 0 1 ^{.7}	16 18 06 6 ^{.02}	10 1 3 ^{.0}
27	28 73 0 ^{.01}	29 1 1 ^{.9}	16 15 32 2 ^{.74}	6 8 3 ^{.0}
Dec. 7	28 79 0 ^{.06}	27 1 2 ^{.0}	16 15 90 0 ^{.58}	16 3 5 3 ^{.0}
17	* 28 91 0 ^{.12}	24 6 2 ^{.5}	* 16 20 28 4 ^{.38}	15 59 9 3 ^{.0}
27	29 07 0 ^{.16}	22 3 2 ^{.3}	16 27 96 7 ^{.68}	56 7 3 ^{.0}
37	7 29 26 0 ^{.19}	34 20 0 2 ^{.3}	16 38 47 10 ^{.51}	15 53 8 3 ^{.0}

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	β DRACONIS.		α OPHIUCHI.		γ DRACONIS.	
	R. A.	Dec. North.	R. A.	Dec. North.	R. A.	Dec. North.
	^h 17 ^m 26	^o 52 ['] 24	^h 17 ^m 27	^o 12 ['] 40	^h 17 ^m 52	^o 51 ['] 30
Jan. 1	50° 37' ^s	63° 6' ["]	35° 65' ^s	44° 8' ["]	54° 67' ^s	26° 9' ["]
11	50° 58' ^s 0 ^h 21	60° 3' ^s 3 ^h 2	35° 85' ^s 0 ^h 20	42° 7' ^s 2 ^h 1	54° 85' ^s 0 ^h 18	23° 5' ^s 3 ^h
21	50° 85' ^s 0 ^h 27	57° 2' ^s 3 ^h 1	36° 08' ^s 0 ^h 23	40° 7' ^s 2 ^h 0	55° 08' ^s 0 ^h 23	20° 4' ^s 3 ^h
31	51° 17' ^s 0 ^h 32	54° 5' ^s 2 ^h 7	36° 34' ^s 0 ^h 26	38° 9' ^s 1 ^h 8	55° 37' ^s 0 ^h 29	17° 5' ^s 2 ^h
Feb. 10	51° 53' ^s 0 ^h 36	52° 2' ^s 2 ^h 3	36° 62' ^s 0 ^h 28	37° 3' ^s 1 ^h 6	55° 69' ^s 0 ^h 32	15° 1' ^s 2 ^h
20	51° 92' ^s 0 ^h 39	50° 6' ^s 1 ^h 6	36° 91' ^s 0 ^h 29	36° 1' ^s 1 ^h 2	56° 06' ^s 0 ^h 37	13° 2' ^s 1 ^h
Mar. 2	52° 32' ^s 0 ^h 40	49° 6' ^s 1 ^h 0	37° 21' ^s 0 ^h 30	35° 3' ^s 0 ^h 8	56° 44' ^s 0 ^h 38	11° 9' ^s 1 ^h
12	52° 74' ^s 0 ^h 42	49° 1' ^s 0 ^h 5	37° 51' ^s 0 ^h 30	34° 9' ^s 0 ^h 4	56° 85' ^s 0 ^h 41	11° 2' ^s 0 ^h
22	53° 14' ^s 0 ^h 40	49° 3' ^s 0 ^h 2	37° 80' ^s 0 ^h 29	34° 9' ^s 0 ^h 0	57° 25' ^s 0 ^h 40	11° 2' ^s 0 ^h
Apr. 1	53° 54' ^s 0 ^h 40	50° 2' ^s 0 ^h 9	38° 09' ^s 0 ^h 29	35° 3' ^s 0 ^h 4	57° 65' ^s 0 ^h 40	11° 8' ^s 0 ^h
11	53° 91' ^s 0 ^h 37	51° 6' ^s 1 ^h 4	38° 36' ^s 0 ^h 27	36° 1' ^s 0 ^h 8	58° 03' ^s 0 ^h 38	13° 0' ^s 1 ^h
21	54° 25' ^s 0 ^h 34	53° 6' ^s 2 ^h 0	38° 62' ^s 0 ^h 26	37° 3' ^s 1 ^h 2	58° 39' ^s 0 ^h 36	14° 8' ^s 1 ^h
May 1	54° 55' ^s 0 ^h 30	56° 1' ^s 2 ^h 5	38° 87' ^s 0 ^h 25	38° 8' ^s 1 ^h 5	58° 72' ^s 0 ^h 33	17° 0' ^s 2 ^h
11	54° 81' ^s 0 ^h 26	58° 9' ^s 2 ^h 8	39° 08' ^s 0 ^h 21	40° 5' ^s 1 ^h 7	59° 00' ^s 0 ^h 28	19° 7' ^s 2 ^h
21	55° 02' ^s 0 ^h 21	62° 0' ^s 3 ^h 1	39° 27' ^s 0 ^h 19	42° 3' ^s 1 ^h 8	59° 24' ^s 0 ^h 24	22° 7' ^s 3 ^h
31	55° 17' ^s 0 ^h 15	65° 2' ^s 3 ^h 2	39° 44' ^s 0 ^h 17	44° 3' ^s 2 ^h 0	59° 43' ^s 0 ^h 19	25° 9' ^s 3 ^h
June 10	55° 26' ^s 0 ^h 09	68° 5' ^s 3 ^h 3	39° 57' ^s 0 ^h 13	46° 3' ^s 2 ^h 0	59° 56' ^s 0 ^h 13	29° 3' ^s 3 ^h
20	55° 30' ^s 0 ^h 04	71° 8' ^s 3 ^h 3	39° 66' ^s 0 ^h 09	48° 3' ^s 2 ^h 0	59° 64' ^s 0 ^h 08	32° 6' ^s 3 ^h
30	55° 28' ^s 0 ^h 02	75° 0' ^s 3 ^h 2	39° 72' ^s 0 ^h 06	50° 2' ^s 1 ^h 9	59° 66' ^s 0 ^h 02	35° 9' ^s 3 ^h
July 10	55° 19' ^s 0 ^h 09	78° 0' ^s 3 ^h 0	39° 74' ^s 0 ^h 02	52° 0' ^s 1 ^h 8	59° 61' ^s 0 ^h 05	39° 0' ^s 3 ^h
20	55° 05' ^s 0 ^h 14	80° 7' ^s 2 ^h 7	39° 71' ^s 0 ^h 03	53° 7' ^s 1 ^h 7	59° 51' ^s 0 ^h 10	41° 9' ^s 2 ^h
30	54° 86' ^s 0 ^h 19	83° 0' ^s 2 ^h 8	39° 65' ^s 0 ^h 06	55° 1' ^s 1 ^h 4	59° 35' ^s 0 ^h 16	44° 5' ^s 2 ^h
Aug. 9	54° 62' ^s 0 ^h 24	85° 0' ^s 2 ^h 0	39° 56' ^s 0 ^h 09	56° 3' ^s 1 ^h 2	59° 14' ^s 0 ^h 21	46° 8' ^s 2 ^h
19	54° 33' ^s 0 ^h 29	86° 5' ^s 1 ^h 5	39° 44' ^s 0 ^h 12	57° 3' ^s 1 ^h 0	58° 88' ^s 0 ^h 26	48° 6' ^s 1 ^h
29	54° 02' ^s 0 ^h 31	87° 7' ^s 1 ^h 2	39° 28' ^s 0 ^h 16	58° 1' ^s 0 ^h 8	58° 29' ^s 0 ^h 29	50° 1' ^s 1 ^h
Sept. 8	53° 68' ^s 0 ^h 34	88° 3' ^s 0 ^h 6	39° 11' ^s 0 ^h 17	58° 5' ^s 0 ^h 4	58° 29' ^s 0 ^h 32	51° 0' ^s 0 ^h
18	53° 33' ^s 0 ^h 35	88° 4' ^s 0 ^h 1	38° 94' ^s 0 ^h 17	58° 7' ^s 0 ^h 2	57° 94' ^s 0 ^h 33	51° 5' ^s 0 ^h
28	52° 98' ^s 0 ^h 35	88° 0' ^s 0 ^h 4	38° 76' ^s 0 ^h 18	58° 6' ^s 0 ^h 1	57° 59' ^s 0 ^h 35	51° 5' ^s 0 ^h
Oct. 8	52° 65' ^s 0 ^h 33	87° 1' ^s 0 ^h 9	38° 59' ^s 0 ^h 17	58° 2' ^s 0 ^h 4	57° 25' ^s 0 ^h 34	50° 9' ^s 0 ^h
18	52° 33' ^s 0 ^h 32	85° 7' ^s 1 ^h 4	38° 43' ^s 0 ^h 16	57° 6' ^s 0 ^h 6	56° 93' ^s 0 ^h 32	49° 9' ^s 1 ^h
28	52° 06' ^s 0 ^h 27	83° 9' ^s 1 ^h 8	38° 31' ^s 0 ^h 12	56° 6' ^s 1 ^h 0	56° 64' ^s 0 ^h 29	48° 3' ^s 1 ^h
Nov. 7	51° 83' ^s 0 ^h 23	81° 6' ^s 2 ^h 3	38° 22' ^s 0 ^h 09	55° 4' ^s 1 ^h 2	56° 39' ^s 0 ^h 25	46° 3' ^s 2 ^h
17	51° 66' ^s 0 ^h 17	78° 9' ^s 2 ^h 7	38° 16' ^s 0 ^h 06	53° 9' ^s 1 ^h 5	56° 20' ^s 0 ^h 19	43° 9' ^s 2 ^h
27	51° 55' ^s 0 ^h 11	75° 8' ^s 3 ^h 1	38° 16' ^s 0 ^h 00	52° 2' ^s 1 ^h 7	56° 06' ^s 0 ^h 14	41° 1' ^s 2 ^h
Dec. 7	51° 51' ^s 0 ^h 04	72° 5' ^s 3 ^h 3	38° 20' ^s 0 ^h 04	50° 3' ^s 1 ^h 9	55° 99' ^s 0 ^h 07	38° 0' ^s 3 ^h
17	* 51° 55' ^s 0 ^h 04	68° 7' ^s 3 ^h 8	* 38° 30' ^s 0 ^h 10	48° 0' ^s 2 ^h 3	55° 98' ^s 0 ^h 01	34° 7' ^s 3 ^h
27	51° 66' ^s 0 ^h 11	65° 2' ^s 3 ^h 5	38° 44' ^s 0 ^h 14	45° 8' ^s 2 ^h 2	* 56° 05' ^s 0 ^h 07	30° 9' ^s 3 ^h
37	51° 83' ^s 0 ^h 17	61° 8' ^s 3 ^h 4	38° 62' ^s 0 ^h 18	43° 7' ^s 2 ^h 1	56° 19' ^s 0 ^h 14	27° 6' ^s 3 ^h

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	♌ Sagittarii.		α LYRÆ. (Vega)		β LYRÆ.	
	R. A.	Dec. South.	R. A.	Dec. North.	R. A.	Dec. North.
	18 ^h 4 ^m	21 ^o 5 ⁱ	18 ^h 31 ^m	38 ^o 38 ⁱ	18 ^h 44 ^m	33 ^o 10 ⁱ
Jan. 1	18 ^s 55 ^s	37 ^s 2 ^s	34 ^s 17 ^s	17 ^s 6 ^s	13 ^s 88 ^s	56 ^s 0 ^s
11	18 ^m 75 ^m 0 ^s 20 ^s	37 ^m 5 ^m 0 ^s 3 ^s	34 ^m 29 ^m 0 ^s 12 ^s	14 ^m 4 ^m 3 ^s 2 ^s	14 ^m 00 ^m 0 ^s 12 ^s	52 ^m 8 ^m 3 ^s 2 ^s
21	18 ^h 99 ^m 0 ^s 24 ^s	37 ^m 6 ^m 0 ^s 1 ^s	34 ^m 46 ^m 0 ^s 17 ^s	11 ^m 4 ^m 2 ^s 0 ^s	14 ^m 16 ^m 0 ^s 16 ^s	50 ^m 0 ^m 2 ^s 8 ^s
31	19 ^h 25 ^m 0 ^s 26 ^s	37 ^m 9 ^m 0 ^s 3 ^s	34 ^m 68 ^m 0 ^s 22 ^s	8 ^m 7 ^m 2 ^s 7 ^s	14 ^m 35 ^m 0 ^s 19 ^s	47 ^m 5 ^m 2 ^s 5 ^s
Feb. 10	19 ^h 54 ^m 0 ^s 29 ^s	38 ^m 0 ^m 0 ^s 1 ^s	34 ^m 93 ^m 0 ^s 25 ^s	6 ^m 3 ^m 2 ^s 4 ^s	14 ^m 59 ^m 0 ^s 24 ^s	45 ^m 2 ^m 2 ^s 3 ^s
20	19 ^h 84 ^m 0 ^s 30 ^s	38 ^m 2 ^m 0 ^s 2 ^s	35 ^m 21 ^m 0 ^s 28 ^s	4 ^m 3 ^m 2 ^s 0 ^s	14 ^m 85 ^m 0 ^s 26 ^s	43 ^m 3 ^m 1 ^s 9 ^s
Mar. 2	20 ^h 16 ^m 0 ^s 32 ^s	38 ^m 3 ^m 0 ^s 1 ^s	35 ^m 52 ^m 0 ^s 31 ^s	2 ^m 9 ^m 1 ^s 4 ^s	15 ^m 14 ^m 0 ^s 29 ^s	41 ^m 8 ^m 1 ^s 5 ^s
12	20 ^h 48 ^m 0 ^s 32 ^s	38 ^m 3 ^m 0 ^s 0 ^s	35 ^m 85 ^m 0 ^s 33 ^s	1 ^m 9 ^m 1 ^s 0 ^s	15 ^m 44 ^m 0 ^s 30 ^s	40 ^m 9 ^m 0 ^s 9 ^s
22	20 ^h 80 ^m 0 ^s 32 ^s	38 ^m 2 ^m 0 ^s 1 ^s	36 ^m 19 ^m 0 ^s 34 ^s	1 ^m 6 ^m 0 ^s 3 ^s	15 ^m 76 ^m 0 ^s 32 ^s	40 ^m 5 ^m 0 ^s 4 ^s
Apr. 1	21 ^h 12 ^m 0 ^s 32 ^s	38 ^m 1 ^m 0 ^s 1 ^s	36 ^m 52 ^m 0 ^s 33 ^s	1 ^m 9 ^m 0 ^s 3 ^s	16 ^m 08 ^m 0 ^s 32 ^s	40 ^m 7 ^m 0 ^s 2 ^s
11	21 ^h 44 ^m 0 ^s 32 ^s	37 ^m 8 ^m 0 ^s 3 ^s	36 ^m 86 ^m 0 ^s 34 ^s	2 ^m 7 ^m 0 ^s 8 ^s	16 ^m 41 ^m 0 ^s 33 ^s	41 ^m 5 ^m 0 ^s 8 ^s
21	21 ^h 75 ^m 0 ^s 31 ^s	37 ^m 5 ^m 0 ^s 3 ^s	37 ^m 19 ^m 0 ^s 33 ^s	4 ^m 1 ^m 1 ^s 4 ^s	16 ^m 73 ^m 0 ^s 32 ^s	42 ^m 7 ^m 1 ^s 2 ^s
May 1	22 ^h 04 ^m 0 ^s 29 ^s	37 ^m 1 ^m 0 ^s 4 ^s	37 ^m 50 ^m 0 ^s 31 ^s	6 ^m 0 ^m 1 ^s 9 ^s	17 ^m 03 ^m 0 ^s 30 ^s	44 ^m 5 ^m 1 ^s 8 ^s
11	22 ^h 32 ^m 0 ^s 28 ^s	36 ^m 7 ^m 0 ^s 4 ^s	37 ^m 79 ^m 0 ^s 29 ^s	8 ^m 3 ^m 2 ^s 3 ^s	17 ^m 32 ^m 0 ^s 29 ^s	46 ^m 6 ^m 2 ^s 1 ^s
21	22 ^h 57 ^m 0 ^s 25 ^s	36 ^m 4 ^m 0 ^s 3 ^s	38 ^m 04 ^m 0 ^s 25 ^s	11 ^m 0 ^m 2 ^s 7 ^s	17 ^m 58 ^m 0 ^s 26 ^s	49 ^m 1 ^m 2 ^s 5 ^s
31	22 ^h 80 ^m 0 ^s 23 ^s	36 ^m 0 ^m 0 ^s 4 ^s	38 ^m 27 ^m 0 ^s 23 ^s	13 ^m 8 ^m 2 ^s 8 ^s	17 ^m 81 ^m 0 ^s 23 ^s	51 ^m 9 ^m 2 ^s 8 ^s
June 10	22 ^h 99 ^m 0 ^s 19 ^s	35 ^m 7 ^m 0 ^s 3 ^s	38 ^m 45 ^m 0 ^s 18 ^s	16 ^m 9 ^m 3 ^s 1 ^s	18 ^m 00 ^m 0 ^s 19 ^s	54 ^m 8 ^m 2 ^s 9 ^s
20	23 ^h 15 ^m 0 ^s 16 ^s	35 ^m 4 ^m 0 ^s 3 ^s	38 ^m 59 ^m 0 ^s 14 ^s	20 ^m 0 ^m 3 ^s 1 ^s	18 ^m 16 ^m 0 ^s 16 ^s	57 ^m 8 ^m 3 ^s 0 ^s
30	23 ^h 27 ^m 0 ^s 12 ^s	35 ^m 2 ^m 0 ^s 2 ^s	38 ^m 68 ^m 0 ^s 9 ^s	23 ^m 1 ^m 3 ^s 1 ^s	18 ^m 27 ^m 0 ^s 11 ^s	60 ^m 8 ^m 3 ^s 0 ^s
July 10	23 ^h 35 ^m 0 ^s 08 ^s	35 ^m 1 ^m 0 ^s 1 ^s	38 ^m 72 ^m 0 ^s 04 ^s	26 ^m 2 ^m 3 ^s 1 ^s	18 ^m 33 ^m 0 ^s 06 ^s	63 ^m 7 ^m 2 ^s 9 ^s
20	23 ^h 38 ^m 0 ^s 03 ^s	35 ^m 0 ^m 0 ^s 1 ^s	38 ^m 71 ^m 0 ^s 01 ^s	29 ^m 1 ^m 2 ^s 9 ^s	18 ^m 35 ^m 0 ^s 02 ^s	66 ^m 3 ^m 2 ^s 8 ^s
30	23 ^h 37 ^m 0 ^s 01 ^s	34 ^m 9 ^m 0 ^s 1 ^s	38 ^m 65 ^m 0 ^s 06 ^s	31 ^m 7 ^m 2 ^s 6 ^s	18 ^m 32 ^m 0 ^s 03 ^s	69 ^m 1 ^m 2 ^s 6 ^s
Aug. 9	23 ^h 31 ^m 0 ^s 06 ^s	34 ^m 9 ^m 0 ^s 0 ^s	38 ^m 55 ^m 0 ^s 10 ^s	34 ^m 1 ^m 2 ^s 4 ^s	18 ^m 24 ^m 0 ^s 08 ^s	71 ^m 4 ^m 2 ^s 3 ^s
19	23 ^h 22 ^m 0 ^s 09 ^s	35 ^m 0 ^m 0 ^s 1 ^s	38 ^m 39 ^m 0 ^s 16 ^s	36 ^m 2 ^m 2 ^s 1 ^s	18 ^m 12 ^m 0 ^s 12 ^s	73 ^m 4 ^m 2 ^s 0 ^s
29	23 ^h 09 ^m 0 ^s 13 ^s	35 ^m 0 ^m 0 ^s 0 ^s	38 ^m 21 ^m 0 ^s 18 ^s	37 ^m 9 ^m 1 ^s 7 ^s	18 ^m 12 ^m 0 ^s 16 ^s	73 ^m 4 ^m 1 ^s 7 ^s
Sept. 8	22 ^h 94 ^m 0 ^s 15 ^s	35 ^m 0 ^m 0 ^s 0 ^s	38 ^m 21 ^m 0 ^s 22 ^s	37 ^m 9 ^m 1 ^s 3 ^s	17 ^m 96 ^m 0 ^s 19 ^s	75 ^m 1 ^m 1 ^s 4 ^s
18	22 ^h 77 ^m 0 ^s 17 ^s	34 ^m 9 ^m 0 ^s 1 ^s	37 ^m 99 ^m 0 ^s 24 ^s	39 ^m 2 ^m 0 ^s 9 ^s	17 ^m 77 ^m 0 ^s 22 ^s	76 ^m 5 ^m 0 ^s 9 ^s
28	22 ^h 59 ^m 0 ^s 18 ^s	34 ^m 9 ^m 0 ^s 0 ^s	37 ^m 75 ^m 0 ^s 26 ^s	40 ^m 1 ^m 0 ^s 4 ^s	17 ^m 55 ^m 0 ^s 22 ^s	77 ^m 4 ^m 0 ^s 5 ^s
Oct. 8	22 ^h 42 ^m 0 ^s 17 ^s	34 ^m 8 ^m 0 ^s 1 ^s	37 ^m 24 ^m 0 ^s 25 ^s	40 ^m 4 ^m 0 ^s 1 ^s	17 ^m 10 ^m 0 ^s 23 ^s	78 ^m 0 ^m 0 ^s 1 ^s
18	22 ^h 26 ^m 0 ^s 16 ^s	34 ^m 6 ^m 0 ^s 2 ^s	36 ^m 99 ^m 0 ^s 23 ^s	39 ^m 9 ^m 0 ^s 5 ^s	16 ^m 87 ^m 0 ^s 23 ^s	77 ^m
28	22 ^h 13 ^m 0 ^s 13 ^s	34 ^m 5 ^m 0 ^s 1 ^s	36 ^m 76 ^m 0 ^s 23 ^s	38 ^m 9 ^m 1 ^s 0 ^s	16 ^m 66 ^m 0 ^s 21 ^s	
Nov. 7	22 ^h 02 ^m 0 ^s 11 ^s	34 ^m 3 ^m 0 ^s 2 ^s	36 ^m 57 ^m 0 ^s 19 ^s	37 ^m 5 ^m 1 ^s 4 ^s	16 ^m 48 ^m 0 ^s 18 ^s	
17	21 ^h 96 ^m 0 ^s 06 ^s	34 ^m 1 ^m 0 ^s 2 ^s	36 ^m 40 ^m 0 ^s 17 ^s	35 ^m 7 ^m 1 ^s 8 ^s	16 ^m 33 ^m 0 ^s 16 ^s	
27	21 ^h 95 ^m 0 ^s 01 ^s	34 ^m 0 ^m 0 ^s 1 ^s	36 ^m 28 ^m 0 ^s 12 ^s	33 ^m 4 ^m 2 ^s 3 ^s	16 ^m 22 ^m 0 ^s 15 ^s	
Dec. 7	21 ^h 98 ^m 0 ^s 03 ^s	34 ^m 0 ^m 0 ^s 0 ^s	36 ^m 22 ^m 0 ^s 06 ^s	30 ^m 9 ^m 2 ^s 5 ^s	16 ^m 11 ^m 0 ^s 14 ^s	
17	22 ^h 06 ^m 0 ^s 08 ^s	34 ^m 0 ^m 0 ^s 0 ^s	36 ^m 20 ^m 0 ^s 02 ^s	28 ^m 1 ^m 2 ^s 8 ^s	16 ^m 0 ^m 0 ^s 14 ^s	
27	22 ^h 20 ^m 0 ^s 14 ^s	34 ^m 0 ^m 0 ^s 0 ^s	36 ^m 24 ^m 0 ^s 04 ^s	25 ^m 1 ^m 3 ^s 0 ^s	16 ^m 0 ^m 0 ^s 14 ^s	
37	22 ^h 38 ^m 0 ^s 18 ^s	34 ^m 1 ^m 0 ^s 1 ^s	36 ^m 33 ^m 0 ^s 09 ^s	21 ^m 7 ^m 3 ^s 4 ^s	16 ^m 0 ^m 0 ^s 18 ^s	

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	ξ AQUILÆ.		δ AQUILÆ.		γ AQUILÆ.	
	R. A.	Dec. North.	R. A.	Dec. North.	R. A.	Dec. North.
	^h 18 ^m 58	^o 18 ⁱ 37	^h 19 ^m 17	^o 2 ⁱ 48	^h 19 ^m 38	^o 10 ⁱ 13
Jan. 1	^s 8 ^h 32 ^s	59 ^h 5 ^s	^s 31 ^h 37 ^s	15 ^h 0 ^s	^s 44 ^h 34 ^s	57 ^h 7 ^s
11	* 8 ^h 45 ^m 0 ^s .13	57 ^h 3 ^m 2 ^s .2	* 31 ^h 49 ^m 0 ^s .12	13 ^h 5 ^m 1 ^s .5	44 ^h 41 ^m 0 ^s .07	56 ^h 0 ^m 1 ^s .7
21	8 ^h 60 ^m 0 ^s .15	55 ^h 4 ^m 1 ^s .9	31 ^h 63 ^m 0 ^s .14	12 ^h 2 ^m 1 ^s .3	* 44 ^h 54 ^m 0 ^s .12	54 ^h 2 ^m 1 ^s .3
31	8 ^h 78 ^m 0 ^s .18	53 ^h 6 ^m 1 ^s .8	31 ^h 80 ^m 0 ^s .17	11 ^h 0 ^m 1 ^s .2	44 ^h 68 ^m 0 ^s .14	52 ^h 7 ^m 1 ^s .5
Feb. 10	8 ^h 99 ^m 0 ^s .21	52 ^h 1 ^m 1 ^s .5	32 ^h 00 ^m 0 ^s .20	10 ^h 0 ^m 1 ^s .0	44 ^h 86 ^m 0 ^s .18	51 ^h 3 ^m 1 ^s .4
20	9 ^h 23 ^m 0 ^s .24	50 ^h 7 ^m 1 ^s .4	32 ^h 23 ^m 0 ^s .23	9 ^h 2 ^m 0 ^s .8	45 ^h 07 ^m 0 ^s .21	50 ^h 1 ^m 1 ^s .2
Mar. 2	9 ^h 49 ^m 0 ^s .26	49 ^h 8 ^m 0 ^s .9	32 ^h 48 ^m 0 ^s .25	8 ^h 6 ^m 0 ^s .6	45 ^h 30 ^m 0 ^s .22	49 ^h 3 ^m 0 ^s .8
12	9 ^h 77 ^m 0 ^s .28	49 ^h 2 ^m 0 ^s .6	32 ^h 74 ^m 0 ^s .26	8 ^h 4 ^m 0 ^s .2	45 ^h 55 ^m 0 ^s .25	48 ^h 8 ^m 0 ^s .5
Apr. 22	10 ^h 05 ^m 0 ^s .28	49 ^h 1 ^m 0 ^s .1	33 ^h 02 ^m 0 ^s .28	8 ^h 4 ^m 0 ^s .0	45 ^h 82 ^m 0 ^s .27	48 ^h 6 ^m 0 ^s .2
1	10 ^h 35 ^m 0 ^s .30	49 ^h 4 ^m 0 ^s .3	33 ^h 30 ^m 0 ^s .28	8 ^h 8 ^m 0 ^s .4	46 ^h 11 ^m 0 ^s .29	48 ^h 9 ^m 0 ^s .3
11	10 ^h 64 ^m 0 ^s .29	50 ^h 1 ^m 0 ^s .7	33 ^h 60 ^m 0 ^s .30	9 ^h 5 ^m 0 ^s .7	46 ^h 40 ^m 0 ^s .29	49 ^h 6 ^m 0 ^s .7
21	10 ^h 94 ^m 0 ^s .30	51 ^h 1 ^m 1 ^s .0	33 ^h 90 ^m 0 ^s .30	10 ^h 5 ^m 1 ^s .0	46 ^h 70 ^m 0 ^s .30	50 ^h 6 ^m 1 ^s .0
May 1	11 ^h 23 ^m 0 ^s .29	52 ^h 6 ^m 1 ^s .5	34 ^h 20 ^m 0 ^s .30	11 ^h 8 ^m 1 ^s .3	47 ^h 00 ^m 0 ^s .30	51 ^h 9 ^m 1 ^s .3
11	11 ^h 51 ^m 0 ^s .28	54 ^h 3 ^m 1 ^s .7	34 ^h 48 ^m 0 ^s .28	13 ^h 3 ^m 1 ^s .5	47 ^h 29 ^m 0 ^s .29	53 ^h 6 ^m 1 ^s .7
21	11 ^h 77 ^m 0 ^s .26	56 ^h 2 ^m 1 ^s .9	34 ^h 76 ^m 0 ^s .28	14 ^h 9 ^m 1 ^s .6	47 ^h 58 ^m 0 ^s .29	55 ^h 5 ^m 1 ^s .9
31	12 ^h 00 ^m 0 ^s .23	58 ^h 4 ^m 2 ^s .2	35 ^h 01 ^m 0 ^s .25	16 ^h 7 ^m 1 ^s .8	47 ^h 84 ^m 0 ^s .26	57 ^h 5 ^m 2 ^s .0
June 19	12 ^h 21 ^m 0 ^s .21	60 ^h 6 ^m 2 ^s .2	35 ^h 24 ^m 0 ^s .23	18 ^h 5 ^m 1 ^s .8	48 ^h 08 ^m 0 ^s .24	59 ^h 6 ^m 2 ^s .1
29	12 ^h 39 ^m 0 ^s .18	62 ^h 9 ^m 2 ^s .3	35 ^h 44 ^m 0 ^s .20	20 ^h 3 ^m 1 ^s .8	48 ^h 29 ^m 0 ^s .21	61 ^h 8 ^m 2 ^s .2
30	12 ^h 53 ^m 0 ^s .14	63 ^h 2 ^m 2 ^s .3	35 ^h 60 ^m 0 ^s .16	22 ^h 1 ^m 1 ^s .8	48 ^h 47 ^m 0 ^s .18	64 ^h 0 ^m 2 ^s .2
July 10	12 ^h 63 ^m 0 ^s .10	67 ^h 4 ^m 2 ^s .2	35 ^h 73 ^m 0 ^s .13	23 ^h 8 ^m 1 ^s .7	48 ^h 61 ^m 0 ^s .14	66 ^h 2 ^m 2 ^s .2
20	12 ^h 68 ^m 0 ^s .05	67 ^h 4 ^m 2 ^s .0	35 ^h 73 ^m 0 ^s .13	23 ^h 8 ^m 1 ^s .7	48 ^h 61 ^m 0 ^s .14	66 ^h 2 ^m 2 ^s .2
30	12 ^h 69 ^m 0 ^s .01	69 ^h 4 ^m 2 ^s .0	35 ^h 81 ^m 0 ^s .08	25 ^h 4 ^m 1 ^s .6	48 ^h 70 ^m 0 ^s .09	68 ^h 2 ^m 2 ^s .0
Aug. 9	12 ^h 69 ^m 0 ^s .01	71 ^h 3 ^m 1 ^s .9	35 ^h 81 ^m 0 ^s .04	25 ^h 4 ^m 1 ^s .4	48 ^h 70 ^m 0 ^s .06	68 ^h 2 ^m 1 ^s .8
19	12 ^h 66 ^m 0 ^s .03	73 ^h 0 ^m 1 ^s .7	35 ^h 85 ^m 0 ^s .00	26 ^h 8 ^m 1 ^s .2	48 ^h 76 ^m 0 ^s .01	70 ^h 0 ^m 1 ^s .7
29	12 ^h 59 ^m 0 ^s .07	74 ^h 4 ^m 1 ^s .4	35 ^h 85 ^m 0 ^s .05	28 ^h 0 ^m 1 ^s .2	48 ^h 77 ^m 0 ^s .03	71 ^h 7 ^m 1 ^s .5
Sept. 29	12 ^h 59 ^m 0 ^s .07	74 ^h 4 ^m 1 ^s .4	35 ^h 80 ^m 0 ^s .05	29 ^h 1 ^m 1 ^s .1	48 ^h 74 ^m 0 ^s .03	73 ^h 2 ^m 1 ^s .5
8	12 ^h 49 ^m 0 ^s .10	75 ^h 6 ^m 1 ^s .2	35 ^h 72 ^m 0 ^s .08	30 ^h 0 ^m 0 ^s .9	48 ^h 66 ^m 0 ^s .08	74 ^h 4 ^m 1 ^s .2
18	12 ^h 35 ^m 0 ^s .14	76 ^h 6 ^m 1 ^s .0	35 ^h 72 ^m 0 ^s .12	30 ^h 0 ^m 0 ^s .6	48 ^h 66 ^m 0 ^s .11	74 ^h 4 ^m 1 ^s .1
28	12 ^h 19 ^m 0 ^s .16	76 ^h 6 ^m 0 ^s .7	35 ^h 60 ^m 0 ^s .14	30 ^h 6 ^m 0 ^s .5	48 ^h 55 ^m 0 ^s .13	75 ^h 5 ^m 0 ^s .7
8	12 ^h 01 ^m 0 ^s .18	77 ^h 3 ^m 0 ^s .3	35 ^h 46 ^m 0 ^s .16	31 ^h 1 ^m 0 ^s .2	48 ^h 42 ^m 0 ^s .16	76 ^h 2 ^m 0 ^s .5
18	12 ^h 01 ^m 0 ^s .18	77 ^h 6 ^m 0 ^s .3	35 ^h 30 ^m 0 ^s .16	31 ^h 3 ^m 0 ^s .2	48 ^h 26 ^m 0 ^s .16	76 ^h 7 ^m 0 ^s .5
Oct. 8	11 ^h 83 ^m 0 ^s .18	77 ^h 7 ^m 0 ^s .1	35 ^h 13 ^m 0 ^s .17	31 ^h 4 ^m 0 ^s .1	48 ^h 09 ^m 0 ^s .17	76 ^h 9 ^m 0 ^s .2
18	11 ^h 65 ^m 0 ^s .18	77 ^h 5 ^m 0 ^s .2	35 ^h 13 ^m 0 ^s .16	31 ^h 4 ^m 0 ^s .2	48 ^h 09 ^m 0 ^s .17	76 ^h 9 ^m 0 ^s .0
28	11 ^h 49 ^m 0 ^s .16	77 ^h 0 ^m 0 ^s .5	34 ^h 97 ^m 0 ^s .16	31 ^h 2 ^m 0 ^s .3	47 ^h 92 ^m 0 ^s .17	76 ^h 9 ^m 0 ^s .3
Nov. 7	11 ^h 34 ^m 0 ^s .15	77 ^h 0 ^m 0 ^s .8	34 ^h 81 ^m 0 ^s .14	30 ^h 9 ^m 0 ^s .3	47 ^h 75 ^m 0 ^s .15	76 ^h 6 ^m 0 ^s .6
17	11 ^h 34 ^m 0 ^s .11	76 ^h 2 ^m 0 ^s .8	34 ^h 67 ^m 0 ^s .14	30 ^h 4 ^m 0 ^s .5	47 ^h 60 ^m 0 ^s .15	76 ^h 0 ^m 0 ^s .6
27	11 ^h 23 ^m 0 ^s .07	75 ^h 1 ^m 1 ^s .1	34 ^h 56 ^m 0 ^s .11	29 ^h 7 ^m 0 ^s .7	47 ^h 48 ^m 0 ^s .12	75 ^h 2 ^m 0 ^s .8
Dec. 7	11 ^h 16 ^m 0 ^s .04	73 ^h 8 ^m 1 ^s .3	34 ^h 48 ^m 0 ^s .08	29 ^h 7 ^m 0 ^s .9	47 ^h 48 ^m 0 ^s .10	75 ^h 2 ^m 1 ^s .1
17	11 ^h 12 ^m 0 ^s .00	72 ^h 2 ^m 1 ^s .6	34 ^h 44 ^m 0 ^s .04	28 ^h 8 ^m 1 ^s .1	47 ^h 38 ^m 0 ^s .06	74 ^h 1 ^m 1 ^s .2
27	11 ^h 12 ^m 0 ^s .00	70 ^h 4 ^m 1 ^s .8	34 ^h 44 ^m 0 ^s .00	27 ^h 7 ^m 1 ^s .1	47 ^h 32 ^m 0 ^s .03	72 ^h 9 ^m 1 ^s .4
37	11 ^h 17 ^m 0 ^s .05	68 ^h 6 ^m 1 ^s .8	34 ^h 44 ^m 0 ^s .04	26 ^h 6 ^m 1 ^s .1	47 ^h 29 ^m 0 ^s .01	71 ^h 5 ^m 1 ^s .4
37	11 ^h 17 ^m 0 ^s .09	68 ^h 6 ^m 2 ^s .2	34 ^h 48 ^m 0 ^s .08	25 ^h 3 ^m 1 ^s .3	47 ^h 30 ^m 0 ^s .06	69 ^h 9 ^m 1 ^s .6
37	5 ^h 26 ^m 0 ^s .09	66 ^h 4 ^m 2 ^s .2	34 ^h 56 ^m 0 ^s .08	24 ^h 0 ^m 1 ^s .3	47 ^h 36 ^m 0 ^s .06	68 ^h 2 ^m 1 ^s .7

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α AQUILÆ. (<i>Allair</i>)		β AQUILÆ.		α ³ CAPRICORNÏ:	
	R. A.	Dec. North.	R. A.	Dec. North.	R. A.	Dec. South.
	^h 19 ^m 43	^o 8 ⁱ 27	^h 19 ^m 47	^o 6 ⁱ 0	^h 20 ^m 9	^o 13 ⁱ 1
Jan. 1	3 ^s 95 ^s	16 ^s 9 ^s	32 ^s 68 ^s	59 ^s 5 ^s	16 ^s 70 ^s	47 ^s 7 ^s
11	0 ^m 07	1 ^m 6	0 ^m 07	1 ^m 4	0 ^m 07	0 ^m 3
21	4 ^s 02	15 ^s 3 ^s	32 ^s 75 ^s	58 ^s 1 ^s	16 ^s 77 ^s	48 ^s 0 ^s
31	0 ^m 12	1 ^m 7	0 ^m 11	1 ^m 6	0 ^m 10	0 ^m 2
	4 ^s 14	13 ^s 6 ^s	32 ^s 86 ^s	56 ^s 5 ^s	16 ^s 87 ^s	48 ^s 2 ^s
	0 ^m 15	1 ^m 4	0 ^m 15	1 ^m 3	0 ^m 15	0 ^m 1
	4 ^s 29	12 ^s 2 ^s	33 ^s 01	55 ^s 2 ^s	17 ^s 02	48 ^s 3 ^s
	0 ^m 18	1 ^m 3	0 ^m 17	1 ^m 2	0 ^m 16	0 ^m 0
Feb. 10	4 ^s 47	10 ^s 9 ^s	33 ^s 18	54 ^s 0 ^s	17 ^s 18	48 ^s 3 ^s
20	0 ^m 20	1 ^m 0	0 ^m 20	0 ^m 9	0 ^m 20	0 ^m 1
Mar. 2	4 ^s 67	9 ^s 9 ^s	33 ^s 38	53 ^s 1 ^s	17 ^s 38	48 ^s 2 ^s
12	0 ^m 23	0 ^m 8	0 ^m 22	0 ^m 7	0 ^m 22	0 ^m 3
	4 ^s 90	9 ^s 1 ^s	33 ^s 60	52 ^s 4 ^s	17 ^s 60	47 ^s 9 ^s
	0 ^m 25	0 ^m 5	0 ^m 25	0 ^m 3	0 ^m 24	0 ^m 5
	5 ^s 15	8 ^s 6 ^s	33 ^s 85	52 ^s 1 ^s	17 ^s 84	47 ^s 4 ^s
	0 ^m 27	0 ^m 0	0 ^m 27	0 ^m 1	0 ^m 27	0 ^m 6
22	5 ^s 42	8 ^s 6 ^s	34 ^s 12	52 ^s 0 ^s	18 ^s 11	46 ^s 8 ^s
Apr. 1	0 ^m 28	0 ^m 2	0 ^m 28	0 ^m 4	0 ^m 28	0 ^m 9
11	5 ^s 70	8 ^s 8 ^s	34 ^s 40	52 ^s 4 ^s	18 ^s 39	45 ^s 9 ^s
21	0 ^m 30	0 ^m 7	0 ^m 29	0 ^m 6	0 ^m 29	1 ^m 0
	6 ^s 00	9 ^s 5 ^s	34 ^s 69	53 ^s 0 ^s	18 ^s 68	44 ^s 9 ^s
	0 ^m 30	1 ^m 0	0 ^m 30	1 ^m 0	0 ^m 31	1 ^m 1
	6 ^s 30	10 ^s 5 ^s	34 ^s 99	54 ^s 0 ^s	18 ^s 99	43 ^s 8 ^s
	0 ^m 29	1 ^m 4	0 ^m 30	1 ^m 4	0 ^m 32	1 ^m 3
May 1	6 ^s 59	11 ^s 9 ^s	35 ^s 29	55 ^s 4 ^s	19 ^s 31	42 ^s 5 ^s
11	0 ^m 30	1 ^m 6	0 ^m 29	1 ^m 5	0 ^m 31	1 ^m 3
21	6 ^s 89	13 ^s 5 ^s	35 ^s 58	56 ^s 9 ^s	19 ^s 62	41 ^s 2 ^s
31	0 ^m 29	1 ^m 8	0 ^m 29	1 ^m 8	0 ^m 31	1 ^m 4
	7 ^s 18	15 ^s 3 ^s	35 ^s 87	58 ^s 7 ^s	19 ^s 93	39 ^s 8 ^s
	0 ^m 26	2 ^m 0	0 ^m 27	1 ^m 9	0 ^m 30	1 ^m 4
	7 ^s 44	17 ^s 3 ^s	36 ^s 14	60 ^s 6 ^s	20 ^s 23	38 ^s 4 ^s
	0 ^m 25	2 ^m 1	0 ^m 25	2 ^m 0	0 ^m 28	1 ^m 3
June 10	7 ^s 69	19 ^s 4 ^s	36 ^s 39	62 ^s 6 ^s	20 ^s 31	37 ^s 1 ^s
20	0 ^m 22	2 ^m 1	0 ^m 22	2 ^m 0	0 ^m 25	1 ^m 2
30	7 ^s 91	21 ^s 5 ^s	36 ^s 61	64 ^s 6 ^s	20 ^s 76	35 ^s 9 ^s
	0 ^m 18	2 ^m 1	0 ^m 19	2 ^m 0	0 ^m 22	1 ^m 2
July 10	8 ^s 09	23 ^s 6 ^s	36 ^s 80	66 ^s 6 ^s	20 ^s 98	34 ^s 7 ^s
	0 ^m 15	2 ^m 1	0 ^m 15	1 ^m 9	0 ^m 18	1 ^m 0
20	8 ^s 24	25 ^s 7 ^s	36 ^s 95	68 ^s 5 ^s	21 ^s 16	33 ^s 7 ^s
	0 ^m 10	1 ^m 9	0 ^m 11	1 ^m 8	0 ^m 14	0 ^m 8
30	8 ^s 34	27 ^s 6 ^s	37 ^s 06	70 ^s 3 ^s	21 ^s 30	32 ^s 9 ^s
	0 ^m 06	1 ^m 8	0 ^m 06	1 ^m 7	0 ^m 10	0 ^m 6
Aug. 9	8 ^s 40	29 ^s 4 ^s	37 ^s 12	72 ^s 0 ^s	21 ^s 40	32 ^s 3 ^s
19	0 ^m 02	1 ^m 6	0 ^m 02	1 ^m 5	0 ^m 05	0 ^m 5
	8 ^s 42	31 ^s 0 ^s	37 ^s 14	73 ^s 5 ^s	21 ^s 45	31 ^s 8 ^s
	0 ^m 03	1 ^m 4	0 ^m 02	1 ^m 2	0 ^m 01	0 ^m 4
	8 ^s 39	32 ^s 4 ^s	37 ^s 12	74 ^s 7 ^s	21 ^s 46	31 ^s 4 ^s
	0 ^m 07	1 ^m 2	0 ^m 07	1 ^m 1	0 ^m 04	0 ^m 1
29	8 ^s 32	33 ^s 6 ^s	37 ^s 05	75 ^s 8 ^s	21 ^s 42	31 ^s 3 ^s
Sept. 8	0 ^m 10	0 ^m 9	0 ^m 10	0 ^m 9	0 ^m 08	0 ^m 1
18	8 ^s 22	34 ^s 5 ^s	36 ^s 95	76 ^s 7 ^s	21 ^s 34	31 ^s 2 ^s
28	0 ^m 14	0 ^m 7	0 ^m 12	0 ^m 6	0 ^m 11	0 ^m 1
	8 ^s 08	35 ^s 2 ^s	36 ^s 83	77 ^s 3 ^s	21 ^s 23	31 ^s 3 ^s
	0 ^m 15	0 ^m 5	0 ^m 15	0 ^m 4	0 ^m 13	0 ^m 1
	7 ^s 93	35 ^s 7 ^s	36 ^s 68	77 ^s 7 ^s	21 ^s 10	31 ^s 4 ^s
	0 ^m 16	0 ^m 2	0 ^m 16	0 ^m 1	0 ^m 16	0 ^m 2
Oct. 8	7 ^s 77	35 ^s 9 ^s	36 ^s 52	77 ^s 8 ^s	20 ^s 94	31 ^s 6 ^s
18	0 ^m 17	0 ^m 0	0 ^m 17	0 ^m 0	0 ^m 16	0 ^m 3
28	7 ^s 60	35 ^s 9 ^s	36 ^s 35	77 ^s 8 ^s	20 ^s 78	31 ^s 9 ^s
	0 ^m 16	0 ^m 3	0 ^m 16	0 ^m 3	0 ^m 17	0 ^m 2
Nov. 7	7 ^s 44	35 ^s 6 ^s	36 ^s 19	77 ^s 5 ^s	20 ^s 62	31 ^s 9 ^s
	0 ^m 18	0 ^m 5	0 ^m 18	0 ^m 5	0 ^m 18	0 ^m 3
	7 ^s 29	35 ^s 1 ^s	36 ^s 04	77 ^s 0 ^s	20 ^s 48	31 ^s 9 ^s
	0 ^m 18	0 ^m 8	0 ^m 12	0 ^m 7		3 ^s
17	7 ^s 16	34 ^s 3 ^s	35 ^s 92	76 ^s 3 ^s	20 ^s 3	
27	0 ^m 09	1 ^m 0	0 ^m 10	0 ^m 9	20 ^s	
Dec. 7	7 ^s 07	33 ^s 3 ^s	35 ^s 82	75 ^s 4 ^s	20 ^s	
	0 ^m 07	1 ^m 1	0 ^m 06	1 ^m 1	20 ^s	
17	7 ^s 00	32 ^s 2 ^s	35 ^s 76	74 ^s 3 ^s	20 ^s	
	0 ^m 02	1 ^m 4	0 ^m 03	1 ^m 2	20 ^s	
	6 ^s 98	30 ^s 8 ^s	35 ^s 73	73 ^s 1 ^s	20 ^s	
	0 ^m 01	1 ^m 4	0 ^m 01	1 ^m 4	20 ^s	
27	6 ^s 99	29 ^s 4 ^s	35 ^s 74	71 ^s 7 ^s	20 ^s	

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α Pavonis.			λ Ursæ Minoris.		
	R. A.	Dec. South.		R. A.	Dec. North.	
	20 ^h	57 ^o		20 ^h	88 ^o	
Jan. 1	13 ^m 5 ^s 98 ^o 0 ^o 06 ^o	14 ⁱ 11 ⁿ 4 ⁿ	2 ⁿ 3 ⁿ	18 ^m 33 ^s 54 ^o 5 ^o 21 ^o	50 ⁱ 16 ⁿ 1 ⁿ	2 ⁿ 3 ⁿ
11	6 ^o 04 ^o 0 ^o 14 ^o	9 ^o 1 ^o	2 ^o 4 ^o	28 ^o 33 ^o 3 ^o 24 ^o	13 ^o 3 ^o	3 ^o 1 ^o
21	6 ^o 18 ^o 0 ^o 21 ^o	6 ^o 7 ^o	2 ^o 7 ^o	* 25 ^o 09 ^o 1 ^o 12 ^o	10 ^o 2 ^o	3 ^o 5 ^o
31	* 6 ^o 39 ^o 0 ^o 27 ^o	4 ^o 0 ^o	2 ^o 5 ^o	* 23 ^o 97 ^o 1 ^o 24 ^o	6 ^o 7 ^o	3 ^o 1 ^o
Feb. 10	6 ^o 66 ^o 0 ^o 31 ^o	14 ^o 1 ^o 5 ^o	2 ^o 4 ^o	25 ^o 21 ^o 3 ^o 28 ^o	3 ^o 6 ^o	3 ^o 0 ^o
20	6 ^o 97 ^o 0 ^o 37 ^o	13 ^o 59 ^o 1 ^o	2 ^o 3 ^o	28 ^o 49 ^o 5 ^o 22 ^o	50 ^o 0 ^o 6 ^o	2 ^o 7 ^o
Mar. 2	7 ^o 34 ^o 0 ^o 41 ^o	56 ^o 8 ^o	2 ^o 2 ^o	33 ^o 71 ^o 6 ^o 87 ^o	49 ^o 57 ^o 9 ^o	2 ^o 3 ^o
12	7 ^o 75 ^o 0 ^o 45 ^o	54 ^o 6 ^o	1 ^o 9 ^o	40 ^o 58 ^o 8 ^o 23 ^o	55 ^o 6 ^o	1 ^o 9 ^o
22	8 ^o 20 ^o 0 ^o 47 ^o	52 ^o 7 ^o	1 ^o 8 ^o	48 ^o 81 ^o 9 ^o 26 ^o	53 ^o 7 ^o	1 ^o 3 ^o
Apr. 1	8 ^o 67 ^o 0 ^o 50 ^o	50 ^o 9 ^o	1 ^o 4 ^o	18 58 ^o 07 ^o 9 ^o 93 ^o	52 ^o 4 ^o	0 ^o 7 ^o
11	9 ^o 17 ^o 0 ^o 52 ^o	49 ^o 5 ^o	1 ^o 2 ^o	19 8 ^o 00 ^o 10 ^o 23 ^o	51 ^o 7 ^o	0 ^o 1 ^o
21	9 ^o 69 ^o 0 ^o 52 ^o	48 ^o 3 ^o	0 ^o 9 ^o	18 ^o 23 ^o 10 ^o 10 ^o	51 ^o 6 ^o	0 ^o 4 ^o
May 1	10 ^o 21 ^o 0 ^o 52 ^o	47 ^o 4 ^o	0 ^o 6 ^o	28 ^o 33 ^o 9 ^o 65 ^o	52 ^o 0 ^o	1 ^o 1 ^o
11	10 ^o 73 ^o 0 ^o 51 ^o	46 ^o 8 ^o	0 ^o 2 ^o	37 ^o 98 ^o 8 ^o 86 ^o	53 ^o 1 ^o	1 ^o 6 ^o
21	11 ^o 24 ^o 0 ^o 49 ^o	46 ^o 6 ^o	0 ^o 1 ^o	46 ^o 84 ^o 7 ^o 80 ^o	54 ^o 7 ^o	2 ^o 1 ^o
31	11 ^o 73 ^o 0 ^o 46 ^o	46 ^o 7 ^o	0 ^o 5 ^o	19 54 ^o 64 ^o 6 ^o 51 ^o	56 ^o 8 ^o	2 ^o 6 ^o
June 10	12 ^o 19 ^o 0 ^o 41 ^o	47 ^o 2 ^o	0 ^o 8 ^o	20 1 ^o 15 ^o 5 ^o 00 ^o	49 59 ^o 4 ^o	2 ^o 9 ^o
20	12 ^o 60 ^o 0 ^o 35 ^o	48 ^o 0 ^o	1 ^o 1 ^o	6 ^o 15 ^o 3 ^o 42 ^o	50 2 ^o 3 ^o	3 ^o 1 ^o
30	12 ^o 95 ^o 0 ^o 30 ^o	49 ^o 1 ^o	1 ^o 4 ^o	9 ^o 57 ^o 1 ^o 68 ^o	5 ^o 4 ^o	3 ^o 4 ^o
July 10	13 ^o 25 ^o 0 ^o 22 ^o	50 ^o 5 ^o	1 ^o 6 ^o	11 ^o 25 ^o 0 ^o 04 ^o	8 ^o 8 ^o	3 ^o 4 ^o
20	13 ^o 47 ^o 0 ^o 15 ^o	52 ^o 1 ^o	1 ^o 8 ^o	11 ^o 21 ^o 1 ^o 77 ^o	12 ^o 2 ^o	3 ^o 5 ^o
30	13 ^o 62 ^o 0 ^o 07 ^o	53 ^o 9 ^o	1 ^o 8 ^o	9 ^o 44 ^o 3 ^o 47 ^o	15 ^o 7 ^o	3 ^o 5 ^o
Aug. 9	13 ^o 69 ^o 0 ^o 01 ^o	55 ^o 7 ^o	2 ^o 0 ^o	5 ^o 97 ^o 5 ^o 11 ^o	19 ^o 2 ^o	3 ^o 4 ^o
19	13 ^o 68 ^o 0 ^o 09 ^o	57 ^o 7 ^o	1 ^o 9 ^o	20 0 ^o 86 ^o 6 ^o 60 ^o	22 ^o 6 ^o	3 ^o 1 ^o
29	13 ^o 59 ^o 0 ^o 16 ^o	13 59 ^o 6 ^o	1 ^o 7 ^o	19 54 ^o 26 ^o 7 ^o 98 ^o	25 ^o 7 ^o	3 ^o 0 ^o
Sept. 8	13 ^o 43 ^o 0 ^o 22 ^o	14 1 ^o 3 ^o	1 ^o 6 ^o	46 ^o 28 ^o 9 ^o 23 ^o	28 ^o 7 ^o	2 ^o 6 ^o
18	13 ^o 21 ^o 0 ^o 27 ^o	2 ^o 9 ^o	1 ^o 3 ^o	37 ^o 05 ^o 10 ^o 27 ^o	31 ^o 3 ^o	2 ^o 2 ^o
28	12 ^o 94 ^o 0 ^o 30 ^o	4 ^o 2 ^o	1 ^o 0 ^o	26 ^o 78 ^o 11 ^o 10 ^o	33 ^o 5 ^o	1 ^o 9 ^o
Oct. 8	12 ^o 64 ^o 0 ^o 32 ^o	5 ^o 2 ^o	0 ^o 6 ^o	15 ^o 68 ^o 11 ^o 70 ^o	35 ^o 4 ^o	1 ^o 4 ^o
18	12 ^o 32 ^o 0 ^o 33 ^o	5 ^o 8 ^o	0 ^o 2 ^o	19 3 ^o 98 ^o 12 ^o 07 ^o	36 ^o 8 ^o	0 ^o 8 ^o
28	11 ^o 99 ^o 0 ^o 31 ^o	6 ^o 0 ^o	0 ^o 3 ^o	18 51 ^o 91 ^o 12 ^o 15 ^o	37 ^o 6 ^o	0 ^o 4 ^o
Nov. 7	11 ^o 68 ^o 0 ^o 27 ^o	5 ^o 7 ^o	0 ^o 7 ^o	39 ^o 76 ^o 11 ^o 89 ^o	38 ^o 0 ^o	0 ^o 2 ^o
17	11 ^o 41 ^o 0 ^o 24 ^o	5 ^o 0 ^o	1 ^o 0 ^o	27 ^o 87 ^o 11 ^o 48 ^o	37 ^o 8 ^o	0 ^o 8 ^o
27	11 ^o 17 ^o 0 ^o 18 ^o	4 ^o 0 ^o	1 ^o 5 ^o	16 ^o 39 ^o 10 ^o 42 ^o	37 ^o 0 ^o	1 ^o 3 ^o
Dec. 7	10 ^o 99 ^o 0 ^o 12 ^o	2 ^o 5 ^o	1 ^o 7 ^o	18 5 ^o 97 ^o 9 ^o 37 ^o	35 ^o 7 ^o	1 ^o 8 ^o
17	10 ^o 87 ^o 0 ^o 04 ^o	14 0 ^o 8 ^o	2 ^o 1 ^o	17 56 ^o 60 ^o 7 ^o 88 ^o	33 ^o 9 ^o	2 ^o 2 ^o
27	10 ^o 83 ^o 0 ^o 02 ^o	13 58 ^o 7 ^o	2 ^o 2 ^o	48 ^o 72 ^o 6 ^o 15 ^o	31 ^o 6 ^o	2 ^o 7 ^o
37	13 ^o 10 ^o 85 ^o	13 56 ^o 5 ^o		17 42 ^o 57 ^o	50 28 ^o 9 ^o	

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α CYGNI.		61 ¹ CYGNI.		ζ Cygni.	
	R. A.	Dec. North.	R. A.	Dec. North.	R. A.	Dec. North.
	20 ^h 36 ^m	44 ^o 42 ⁱ	20 ^h 59 ^m	37 ^o 58 ⁱ	21 ^h 6 ^m	29 ^o 34 ⁱ
Jan. 1	1 ^h 65 ^m 0 ^s	71 ^o 4 ⁱ 0 ^s	48 ^h 39 ^m 0 ^s	42 ^h 2 ^m 0 ^s	12 ^h 33 ^m 0 ^s	62 ^h 7 ^m 0 ^s
11	1 ^h 61 ^m 0 ^s 04	68 ^o 7 ⁱ 2 ^s 7	48 ^h 35 ^m 0 ^s 04	39 ^h 9 ^m 2 ^s 3	12 ^h 29 ^m 0 ^s 04	60 ^h 6 ^m 2 ^s 1
21	1 ^h 61 ^m 0 ^s 00	65 ^o 8 ⁱ 2 ^s 9	48 ^h 36 ^m 0 ^s 01	37 ^h 4 ^m 2 ^s 5	12 ^h 30 ^m 0 ^s 01	58 ^h 4 ^m 2 ^s 2
31	* 1 ^h 68 ^m 0 ^s 07	62 ^o 6 ⁱ 3 ^s 2	48 ^h 41 ^m 0 ^s 05	34 ^h 9 ^m 2 ^s 5	12 ^h 35 ^m 0 ^s 05	56 ^h 1 ^m 2 ^s 3
Feb. 10	0 ^h 11 ^m	2 ^o 8 ⁱ	* 0 ^h 10 ^m	2 ^h 7 ^m	* 0 ^h 08 ^m	2 ^h 5 ^m
20	1 ^h 79 ^m 0 ^s 17	59 ^o 8 ⁱ 2 ^s 6	48 ^h 51 ^m 0 ^s 14	32 ^h 2 ^m 2 ^s 3	12 ^h 43 ^m 0 ^s 12	53 ^h 6 ^m 2 ^s 0
Mar. 2	1 ^h 96 ^m 0 ^s 20	57 ^o 2 ⁱ 2 ^s 2	48 ^h 65 ^m 0 ^s 18	29 ^h 9 ^m 2 ^s 1	12 ^h 55 ^m 0 ^s 16	51 ^h 6 ^m 1 ^s 8
12	2 ^h 16 ^m 0 ^s 26	55 ^o 0 ⁱ 1 ^s 9	48 ^h 83 ^m 0 ^s 22	27 ^h 8 ^m 1 ^s 6	12 ^h 71 ^m 0 ^s 20	49 ^h 8 ^m 1 ^s 4
22	2 ^h 42 ^m 0 ^s 29	53 ^o 1 ⁱ 1 ^s 4	49 ^h 05 ^m 0 ^s 26	26 ^h 2 ^m 1 ^s 3	12 ^h 91 ^m 0 ^s 23	48 ^h 4 ^m 1 ^s 1
Apr. 1	2 ^h 71 ^m 0 ^s 32	51 ^o 7 ⁱ 0 ^s 8	49 ^h 31 ^m 0 ^s 30	24 ^h 9 ^m 0 ^s 7	13 ^h 14 ^m 0 ^s 26	47 ^h 3 ^m 0 ^s 5
11	3 ^h 03 ^m 0 ^s 35	50 ^o 9 ⁱ 0 ^s 3	49 ^h 61 ^m 0 ^s 32	24 ^h 2 ^m 0 ^s 2	13 ^h 40 ^m 0 ^s 29	46 ^h 8 ^m 0 ^s 1
21	3 ^h 38 ^m 0 ^s 37	50 ^o 6 ⁱ 0 ^s 3	49 ^h 93 ^m 0 ^s 34	24 ^h 0 ^m 0 ^s 4	13 ^h 69 ^m 0 ^s 30	46 ^h 7 ^m 0 ^s 4
May 1	3 ^h 75 ^m 0 ^s 37	50 ^o 9 ⁱ 0 ^s 9	50 ^h 27 ^m 0 ^s 36	24 ^h 4 ^m 0 ^s 8	13 ^h 99 ^m 0 ^s 33	47 ^h 1 ^m 0 ^s 9
11	4 ^h 12 ^m 0 ^s 38	51 ^o 8 ⁱ 1 ^s 5	50 ^h 63 ^m 0 ^s 37	25 ^h 2 ^m 1 ^s 5	14 ^h 32 ^m 0 ^s 38	48 ^h 0 ^m 1 ^s 4
21	4 ^h 50 ^m 0 ^s 37	53 ^o 3 ⁱ 2 ^s 0	51 ^h 00 ^m 0 ^s 36	26 ^h 7 ^m 1 ^s 9	14 ^h 65 ^m 0 ^s 33	49 ^h 4 ^m 1 ^s 8
31	4 ^h 87 ^m 0 ^s 35	55 ^o 3 ⁱ 2 ^s 4	51 ^h 36 ^m 0 ^s 35	28 ^h 6 ^m 2 ^s 3	14 ^h 98 ^m 0 ^s 33	51 ^h 2 ^m 2 ^s 1
June 10	5 ^h 22 ^m 0 ^s 32	57 ^o 7 ⁱ 2 ^s 7	51 ^h 71 ^m 0 ^s 33	30 ^h 9 ^m 2 ^s 7	15 ^h 31 ^m 0 ^s 30	53 ^h 3 ^m 2 ^s 5
20	5 ^h 54 ^m 0 ^s 28	60 ^o 4 ⁱ 3 ^s 1	52 ^h 04 ^m 0 ^s 30	33 ^h 6 ^m 2 ^s 9	15 ^h 61 ^m 0 ^s 29	55 ^h 8 ^m 2 ^s 7
30	5 ^h 82 ^m 0 ^s 24	63 ^o 5 ⁱ 3 ^s 2	52 ^h 34 ^m 0 ^s 27	36 ^h 5 ^m 3 ^s 2	15 ^h 90 ^m 0 ^s 26	58 ^h 5 ^m 2 ^s 9
July 10	6 ^h 06 ^m 0 ^s 20	66 ^o 7 ⁱ 3 ^s 4	52 ^h 61 ^m 0 ^s 23	39 ^h 7 ^m 3 ^s 3	16 ^h 16 ^m 0 ^s 21	61 ^h 4 ^m 3 ^s 0
20	6 ^h 26 ^m 0 ^s 14	70 ^o 1 ⁱ 3 ^s 4	52 ^h 84 ^m 0 ^s 17	43 ^h 0 ^m 3 ^s 3	16 ^h 37 ^m 0 ^s 18	64 ^h 4 ^m 2 ^s 9
30	6 ^h 40 ^m 0 ^s 08	73 ^o 5 ⁱ 3 ^s 4	53 ^h 01 ^m 0 ^s 13	46 ^h 3 ^m 3 ^s 3	16 ^h 55 ^m 0 ^s 12	67 ^h 3 ^m 3 ^s 0
Aug. 9	6 ^h 48 ^m 0 ^s 03	76 ^o 9 ⁱ 3 ^s 2	53 ^h 14 ^m 0 ^s 08	49 ^h 6 ^m 3 ^s 2	16 ^h 67 ^m 0 ^s 09	70 ^h 3 ^m 2 ^s 8
19	6 ^h 51 ^m 0 ^s 03	80 ^o 1 ⁱ 3 ^s 1	53 ^h 22 ^m 0 ^s 02	52 ^h 8 ^m 3 ^s 0	16 ^h 76 ^m 0 ^s 03	73 ^h 1 ^m 2 ^s 7
29	6 ^h 48 ^m 0 ^s 09	83 ^o 2 ⁱ 2 ^s 9	53 ^h 24 ^m 0 ^s 03	55 ^h 8 ^m 2 ^s 9	16 ^h 79 ^m 0 ^s 02	75 ^h 8 ^m 2 ^s 4
Sept. 8	6 ^h 39 ^m 0 ^s 13	86 ^o 1 ⁱ 2 ^s 6	53 ^h 21 ^m 0 ^s 07	58 ^h 7 ^m 2 ^s 6	16 ^h 77 ^m 0 ^s 06	78 ^h 2 ^m 2 ^s 2
18	6 ^h 26 ^m 0 ^s 18	88 ^o 7 ⁱ 2 ^s 2	53 ^h 14 ^m 0 ^s 11	61 ^h 3 ^m 2 ^s 3	16 ^h 71 ^m 0 ^s 10	80 ^h 4 ^m 1 ^s 9
28	6 ^h 08 ^m 0 ^s 21	90 ^o 9 ⁱ 1 ^s 8	53 ^h 03 ^m 0 ^s 15	63 ^h 6 ^m 1 ^s 9	16 ^h 61 ^m 0 ^s 13	82 ^h 3 ^m 1 ^s 6
Oct. 8	5 ^h 87 ^m 0 ^s 23	92 ^o 7 ⁱ 1 ^s 4	52 ^h 88 ^m 0 ^s 18	65 ^h 5 ^m 1 ^s 5	16 ^h 48 ^m 0 ^s 16	83 ^h 9 ^m 1 ^s 2
18	5 ^h 64 ^m 0 ^s 25	94 ^o 1 ⁱ 1 ^s 0	52 ^h 70 ^m 0 ^s 20	67 ^h 0 ^m 1 ^s 1	16 ^h 32 ^m 0 ^s 17	85 ^h 1 ^m 0 ^s 9
28	5 ^h 39 ^m 0 ^s 26	95 ^o 1 ⁱ 0 ^s 4	52 ^h 50 ^m 0 ^s 20	68 ^h 1 ^m 0 ^s 7	16 ^h 15 ^m 0 ^s 18	86 ^h 0 ^m 0 ^s 4
Nov. 7	5 ^h 13 ^m 0 ^s 26	95 ^o 5 ⁱ 0 ^s 0	52 ^h 30 ^m 0 ^s 21	68 ^h 8 ^m 0 ^s 2	15 ^h 97 ^m 0 ^s 19	86 ^h 4 ^m 0 ^s 0
17	4 ^h 87 ^m 0 ^s 25	95 ^o 5 ⁱ 0 ^s 5	52 ^h 09 ^m 0 ^s 20	69 ^h 0 ^m 0 ^s 2	15 ^h 78 ^m 0 ^s 17	86 ^h 4 ^m 0 ^s 3
27	4 ^h 62 ^m 0 ^s 22	95 ^o 0 ⁱ 1 ^s 1	51 ^h 89 ^m 0 ^s 18	68 ^h 8 ^m 0 ^s 7	15 ^h 61 ^m 0 ^s 17	86 ^h 1 ^m 0 ^s 8
Dec. 7	4 ^h 40 ^m 0 ^s 19	93 ^o 9 ⁱ 1 ^s 5	51 ^h 71 ^m 0 ^s 16	68 ^h 1 ^m 1 ^s 2	15 ^h 44 ^m 0 ^s 14	85 ^h 3 ^m 1 ^s 1
17	4 ^h 21 ^m 0 ^s 16	92 ^o 4 ⁱ 1 ^s 9	51 ^h 55 ^m 0 ^s 13	66 ^h 9 ^m 1 ^s 5	15 ^h 30 ^m 0 ^s 12	84 ^h 2 ^m 1 ^s 5
27	4 ^h 05 ^m 0 ^s 11	90 ^o 5 ⁱ 2 ^s 3	51 ^h 42 ^m 0 ^s 10	65 ^h 4 ^m 2 ^s 0	15 ^h 18 ^m 0 ^s 09	82 ^h 7 ^m 1 ^s 8
37	3 ^h 94 ^m 0 ^s 07	88 ^o 2 ⁱ 2 ^s 6	51 ^h 32 ^m 0 ^s 06	63 ^h 4 ^m 2 ^s 2	15 ^h 09 ^m 0 ^s 05	80 ^h 9 ^m 2 ^s 0
	3 ^h 87 ^m	85 ^o 6 ⁱ	51 ^h 26 ^m	61 ^h 2 ^m	15 ^h 04 ^m	78 ^h 9 ^m

**APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.**

Day of the Month.	α CEPHEI.		β AQUARI.		β CEPHEI.	
	R. A.	Dec. North.	R. A.	Dec. South.	R. A.	Dec. North.
	^h 21 ^m 14	^o 61 ⁱ 54	^h 21 ^m 23	^o 6 ⁱ 15	^h 21 ^m 26	^o 69 ⁱ 51
Jan. 1	45 ^s 88 ^s	75 ^s 3 ^s	14 ^s 19 ^s	45 ^s 6 ^s	32 ^s 52 ^s	78 ^s 9 ^s
11	45 ^s 68 ^s 0 ^s 20	72 ^s 7 ^s 2 ^s 6	14 ^s 18 ^s 0 ^s 01	46 ^s 1 ^s 0 ^s 5	32 ^s 18 ^s 0 ^s 24	76 ^s 4 ^s 2 ^s 5
21	45 ^s 55 ^s 0 ^s 13	69 ^s 7 ^s 3 ^s 0	14 ^s 20 ^s 0 ^s 02	46 ^s 6 ^s 0 ^s 5	31 ^s 94 ^s 0 ^s 24	73 ^s 6 ^s 2 ^s 8
31	45 ^s 50 ^s 0 ^s 05	66 ^s 6 ^s 3 ^s 1	14 ^s 25 ^s 0 ^s 05	46 ^s 9 ^s 0 ^s 3	31 ^s 80 ^s 0 ^s 14	70 ^s 5 ^s 3 ^s 1
	* 0 ^s 04	3 ^s 4	0 ^s 09	0 ^s 3	0 ^s 03	3 ^s 5
Feb. 10	45 ^s 54 ^s	63 ^s 2 ^s	14 ^s 34 ^s	47 ^s 2 ^s	31 ^s 77 ^s	67 ^s 0 ^s
20	45 ^s 66 ^s 0 ^s 12	60 ^s 1 ^s 3 ^s 1	* 14 ^s 46 ^s 0 ^s 12	47 ^s 2 ^s 0 ^s 0	* 31 ^s 87 ^s 0 ^s 10	63 ^s 8 ^s 3 ^s 2
Mar. 2	45 ^s 86 ^s 0 ^s 30	57 ^s 2 ^s 2 ^s 9	14 ^s 61 ^s 0 ^s 15	47 ^s 1 ^s 0 ^s 1	32 ^s 09 ^s 0 ^s 22	60 ^s 8 ^s 3 ^s 0
12	46 ^s 14 ^s 0 ^s 28	54 ^s 7 ^s 2 ^s 5	14 ^s 79 ^s 0 ^s 18	46 ^s 8 ^s 0 ^s 3	32 ^s 41 ^s 0 ^s 32	58 ^s 0 ^s 2 ^s 8
	0 ^s 34	2 ^s 1	0 ^s 20	0 ^s 6	0 ^s 43	2 ^s 3
Apr. 22	46 ^s 48 ^s	52 ^s 6 ^s	14 ^s 99 ^s	46 ^s 2 ^s	32 ^s 84 ^s	55 ^s 7 ^s
1	46 ^s 89 ^s 0 ^s 41	51 ^s 0 ^s 1 ^s 6	15 ^s 22 ^s 0 ^s 23	45 ^s 3 ^s 0 ^s 9	33 ^s 35 ^s 0 ^s 51	53 ^s 8 ^s 1 ^s 9
11	47 ^s 35 ^s 0 ^s 46	50 ^s 0 ^s 1 ^s 0	15 ^s 48 ^s 0 ^s 26	44 ^s 2 ^s 1 ^s 1	33 ^s 93 ^s 0 ^s 58	52 ^s 5 ^s 1 ^s 3
21	47 ^s 84 ^s 0 ^s 49	49 ^s 6 ^s 0 ^s 4	15 ^s 76 ^s 0 ^s 28	42 ^s 9 ^s 1 ^s 3	34 ^s 57 ^s 0 ^s 64	51 ^s 8 ^s 0 ^s 7
	0 ^s 52	0 ^s 2	0 ^s 30	1 ^s 4	0 ^s 68	0 ^s 1
May 1	48 ^s 36 ^s	49 ^s 8 ^s	16 ^s 06 ^s	41 ^s 5 ^s	35 ^s 25 ^s	51 ^s 7 ^s
11	48 ^s 89 ^s 0 ^s 53	50 ^s 6 ^s 0 ^s 8	16 ^s 36 ^s 0 ^s 30	39 ^s 8 ^s 1 ^s 7	35 ^s 94 ^s 0 ^s 69	52 ^s 3 ^s 0 ^s 6
21	49 ^s 41 ^s 0 ^s 52	52 ^s 0 ^s 1 ^s 4	16 ^s 68 ^s 0 ^s 32	38 ^s 1 ^s 1 ^s 7	36 ^s 62 ^s 0 ^s 68	53 ^s 4 ^s 1 ^s 1
31	49 ^s 91 ^s 0 ^s 50	54 ^s 0 ^s 2 ^s 0	16 ^s 99 ^s 0 ^s 31	36 ^s 3 ^s 1 ^s 8	37 ^s 28 ^s 0 ^s 66	55 ^s 1 ^s 1 ^s 7
	0 ^s 47	2 ^s 4	0 ^s 31	1 ^s 8	0 ^s 61	2 ^s 2
June 10	50 ^s 38 ^s	56 ^s 4 ^s	17 ^s 30 ^s	34 ^s 5 ^s	37 ^s 89 ^s	57 ^s 3 ^s
20	50 ^s 80 ^s 0 ^s 42	59 ^s 3 ^s 2 ^s 9	17 ^s 59 ^s 0 ^s 29	32 ^s 7 ^s 1 ^s 8	38 ^s 44 ^s 0 ^s 55	60 ^s 9 ^s 2 ^s 7
30	51 ^s 16 ^s 0 ^s 26	62 ^s 4 ^s 3 ^s 1	17 ^s 85 ^s 0 ^s 26	31 ^s 0 ^s 1 ^s 7	38 ^s 92 ^s 0 ^s 48	63 ^s 0 ^s 3 ^s 0
July 10	51 ^s 46 ^s 0 ^s 30	65 ^s 9 ^s 3 ^s 5	18 ^s 09 ^s 0 ^s 24	29 ^s 4 ^s 1 ^s 6	39 ^s 31 ^s 0 ^s 39	66 ^s 4 ^s 3 ^s 4
	0 ^s 23	3 ^s 6	0 ^s 20	1 ^s 4	0 ^s 30	3 ^s 6
20	51 ^s 69 ^s	69 ^s 5 ^s	18 ^s 29 ^s	28 ^s 0 ^s	39 ^s 61 ^s	70 ^s 9 ^s
30	51 ^s 83 ^s 0 ^s 14	73 ^s 1 ^s 3 ^s 6	18 ^s 45 ^s 0 ^s 16	26 ^s 7 ^s 1 ^s 3	39 ^s 80 ^s 0 ^s 19	73 ^s 7 ^s 3 ^s 7
Aug. 9	51 ^s 89 ^s 0 ^s 06	76 ^s 9 ^s 3 ^s 8	18 ^s 57 ^s 0 ^s 12	25 ^s 7 ^s 1 ^s 0	39 ^s 88 ^s 0 ^s 08	77 ^s 4 ^s 3 ^s 7
19	51 ^s 88 ^s 0 ^s 01	80 ^s 5 ^s 2 ^s 6	18 ^s 64 ^s 0 ^s 07	24 ^s 9 ^s 0 ^s 8	39 ^s 86 ^s 0 ^s 02	81 ^s 2 ^s 3 ^s 8
	0 ^s 09	3 ^s 5	0 ^s 02	0 ^s 6	0 ^s 12	3 ^s 6
29	51 ^s 79 ^s	84 ^s 0 ^s	18 ^s 66 ^s	24 ^s 3 ^s	39 ^s 74 ^s	84 ^s 8 ^s
Sept. 8	51 ^s 62 ^s 0 ^s 17	87 ^s 2 ^s 3 ^s 2	18 ^s 65 ^s 0 ^s 01	23 ^s 8 ^s 0 ^s 5	39 ^s 52 ^s 0 ^s 22	88 ^s 3 ^s 3 ^s 5
18	51 ^s 39 ^s 0 ^s 23	90 ^s 2 ^s 3 ^s 0	18 ^s 60 ^s 0 ^s 05	23 ^s 6 ^s 0 ^s 2	39 ^s 21 ^s 0 ^s 31	91 ^s 5 ^s 3 ^s 2
28	51 ^s 10 ^s 0 ^s 29	92 ^s 8 ^s 2 ^s 6	18 ^s 51 ^s 0 ^s 09	23 ^s 6 ^s 0 ^s 0	38 ^s 82 ^s 0 ^s 39	94 ^s 4 ^s 2 ^s 9
	0 ^s 34	2 ^s 3	0 ^s 11	0 ^s 0	0 ^s 47	2 ^s 5
Oct. 8	50 ^s 76 ^s	95 ^s 1 ^s	18 ^s 40 ^s	23 ^s 6 ^s	38 ^s 35 ^s	96 ^s 9 ^s
18	50 ^s 38 ^s 0 ^s 28	96 ^s 8 ^s 1 ^s 7	18 ^s 26 ^s 0 ^s 14	23 ^s 9 ^s 0 ^s 2	37 ^s 84 ^s 0 ^s 51	99 ^s 9 ^s 2 ^s 1
28	49 ^s 98 ^s 0 ^s 40	98 ^s 1 ^s 1 ^s 3	18 ^s 13 ^s 0 ^s 13	24 ^s 2 ^s 0 ^s 3	37 ^s 28 ^s 0 ^s 56	100 ^s 6 ^s 1 ^s 6
Nov. 7	49 ^s 57 ^s 0 ^s 41	98 ^s 8 ^s 0 ^s 7	17 ^s 99 ^s 0 ^s 14	24 ^s 6 ^s 0 ^s 4	36 ^s 69 ^s 0 ^s 59	101 ^s 6 ^s 1 ^s 0
	0 ^s 42	0 ^s 2	0 ^s 14	0 ^s 5	0 ^s 59	0 ^s 5
17	49 ^s 15 ^s	99 ^s 0 ^s	17 ^s 85 ^s	25 ^s 1 ^s	36 ^s 10 ^s	102 ^s 1 ^s
27	48 ^s 75 ^s 0 ^s 40	98 ^s 6 ^s 0 ^s 4	17 ^s 73 ^s 0 ^s 12	25 ^s 6 ^s 0 ^s 5	35 ^s 51 ^s 0 ^s 59	102 ^s 0 ^s 0 ^s 1
Dec. 7	48 ^s 38 ^s 0 ^s 37	97 ^s 7 ^s 0 ^s 9	17 ^s 62 ^s 0 ^s 11	26 ^s 1 ^s 0 ^s 5	34 ^s 96 ^s 0 ^s 55	101 ^s 3 ^s 0 ^s 7
17	48 ^s 04 ^s 0 ^s 34	96 ^s 2 ^s 1 ^s 5	17 ^s 54 ^s 0 ^s 08	26 ^s 7 ^s 0 ^s 6	34 ^s 44 ^s 0 ^s 52	100 ^s 1 ^s 1 ^s 2
	0 ^s 29	2 ^s 1	0 ^s 05	0 ^s 6	0 ^s 46	1 ^s 9
27	47 ^s 75 ^s	94 ^s 1 ^s	17 ^s 49 ^s	27 ^s 3 ^s	33 ^s 98 ^s	98 ^s 2 ^s
37	47 ^s 52 ^s 0 ^s 23	91 ^s 7 ^s 2 ^s 4	17 ^s 46 ^s 0 ^s 03	27 ^s 9 ^s 0 ^s 6	33 ^s 60 ^s 0 ^s 38	95 ^s 9 ^s 2 ^s 3

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	α Pegasi.		α AQUARI.		α Gruis.	
	R. A.	Dec. North.	R. A.	Dec. South.	R. A.	Dec. South.
	21 ^h 36 ^m	9° 9'	21 ^h 57 ^m	1° 4'	21 ^h 58 ^m	47° 42'
Jan. 1	25 ^s 47 ^s 0 ^o 03	17 ^o 4 ^o 1 ^o 2	40 ^s 07 ^s 0 ^o 03	62 ^s 3 ^s 0 ^o 07	14 ^s 69 ^s 0 ^o 08	91 ^o 0 ^o 1 ^o 5
11	25 44 0 01	16 2 1 2	40 04 0 01	63 0 0 7	14 61 0 04	89 5 1 8
21	25 45 0 01	14 9 1 3	40 03 0 01	63 7 0 7	14 57 0 04	87 7 2 1
31	25 48 0 03	13 7 1 2	40 05 0 02	64 3 0 6	14 58 0 01	85 6 2 2
	0 06	1 1	0 04	0 5	0 05	2 2
Feb. 10	25 54 0 10	12 6 1 1	40 09 0 07	64 8 0 4	14 63 0 11	83 4 2 7
20	25 64 0 13	11 5 0 7	40 16 0 11	65 2 0 1	14 74 0 15	80 7 2 6
Mar. 2	25 77 0 16	10 8 0 5	40 28 0 14	65 3 0 2	14 89 0 19	78 1 2 6
12	25 93 0 19	10 3 0 1	40 42 0 18	65 1 0 3	15 08 0 24	75 3 2 6
22	26 12 0 22	10 2 0 1	40 60 0 20	64 8 0 7	15 32 0 28	72 9 2 6
Apr. 1	26 34 0 25	10 3 0 5	40 80 0 24	64 1 0 9	15 60 0 32	70 3 2 5
11	26 59 0 27	10 8 0 9	41 04 0 26	63 2 1 2	15 92 0 36	67 8 2 4
21	26 86 0 29	11 7 1 2	41 30 0 28	62 0 1 4	16 28 0 38	65 4 2 2
May 1	27 15 0 31	12 9 1 5	41 58 0 30	60 6 1 6	16 66 0 41	63 2 1 9
11	27 46 0 31	14 4 1 8	41 88 0 31	59 0 1 8	17 07 0 42	61 3 1 7
21	27 77 0 32	16 2 2 0	42 19 0 32	57 2 2 0	17 49 0 43	59 6 1 4
31	28 09 0 30	18 2 2 1	42 51 0 31	55 2 2 0	17 92 0 42	58 2 1 0
June 10	28 39 0 29	20 3 2 2	42 82 0 30	53 2 1 9	18 34 0 42	57 2 0 6
20	28 68 0 27	22 5 2 3	43 12 0 28	51 3 2 0	18 76 0 39	56 6 0 3
30	28 95 0 24	24 8 2 2	43 40 0 26	49 3 1 9	19 15 0 35	56 3 0 2
July 10	29 19 0 20	27 0 2 2	43 66 0 22	47 4 1 8	19 50 0 31	56 5 0 5
20	29 39 0 16	29 2 2 1	43 88 0 19	45 6 1 5	19 81 0 26	57 0 0 9
30	29 55 0 13	31 3 1 9	44 07 0 14	44 1 1 4	20 07 0 20	57 9 1 1
Aug. 9	29 68 0 07	33 2 1 7	44 21 0 10	42 7 1 2	20 27 0 14	59 0 1 5
19	29 75 0 04	34 9 1 5	44 31 0 06	41 5 1 0	20 41 0 07	60 5 1 7
29	29 79 0 01	36 4 1 2	44 37 0 02	40 5 0 7	20 48 0 01	62 2 1 8
Sept. 8	29 78 0 05	37 7 1 1	44 39 0 02	39 8 0 5	20 49 0 05	64 0 1 8
18	29 73 0 08	38 8 0 8	44 37 0 06	39 3 0 4	20 44 0 11	65 8 1 9
28	29 65 0 11	39 6 0 5	44 31 0 09	38 9 0 1	20 33 0 15	67 7 1 7
Oct. 8	29 54 0 12	40 1 0 4	44 22 0 11	38 8 0 1	20 18 0 19	69 4 1 5
18	29 42 0 14	40 5 0 0	44 11 0 12	38 9 0 2	19 99 0 22	70 9 1 3
28	29 28 0 14	40 5 0 1	43 98 0 12	39 1 0 3	19 77 0 23	72 2 1 0
Nov. 7	29 14 0 14	40 4 0 4	43 85 0 12	39 4 0 4	19 54 0 23	73 2 0 6
17	29 00 0 12	40 0 0 6	43 73 0 13	39 8 0 6	19 31 0 23	73 8 0 2
27	28 87 0 11	39 4 0 7	43 60 0 11	40 4 0 6	19 08 0 21	74 0 0 2
Dec. 7	28 76 0 09	38 7 1 0	43 49 0 10	41 0 0 7	18 87 0 17	73 8 0 6
17	28 67 0 08	37 7 1 1	43 39 0 07	41 7 0 7	18 70 0 15	73 2 1 0
27	28 59 0 04	36 6 1 2	43 32 0 06	42 4 0 8	18 55 0 11	72 2 1 3
37	28 55 0 04	35 4 1 2	43 26 0 06	43 2 0 8	18 44 0 11	70 9 1 3

APPARENT PLACES OF THE PRINCIPAL FIXED STARS,
FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	ζ Pegasi.		α PISCIS AUSTRALIS. (Fomalhaut)		α PEGASI. (Markab)	
	R. A.	Dec. North.	R. A.	Dec. South.	R. A.	Dec. North.
	22 ^h 33 ^m	10° 0'	22 ^h 48 ^m	30° 27'	22 ^h 56 ^m	14° 21'
Jan. 1	35° 10 ^s	36° 7 ^s	54° 76 ^s	34° 0 ^s	53° 88 ^s	30° 4 ^s
11	35° 03 ^s 0 ^m 07 ^s	35° 6 ^s 1 ^m 1 ^s	54° 67 ^s 0 ^m 09 ^s	33° 6 ^s 0 ^m 4 ^s	53° 80 ^s 0 ^m 08 ^s	29° 3 ^s 1 ^m 1 ^s
21	34° 99 ^s 0 ^m 04 ^s	34° 5 ^s 1 ^m 1 ^s	54° 60 ^s 0 ^m 07 ^s	32° 8 ^s 0 ^m 8 ^s	53° 73 ^s 0 ^m 07 ^s	28° 1 ^s 1 ^m 2 ^s
31	34° 97 ^s 0 ^m 02 ^s	33° 4 ^s 1 ^m 1 ^s	54° 57 ^s 0 ^m 03 ^s	31° 8 ^s 1 ^m 0 ^s	53° 69 ^s 0 ^m 04 ^s	26° 9 ^s 1 ^m 2 ^s
		0 ^m 00 ^s		0 ^m 01 ^s	0 ^m 02 ^s	1 ^m 1 ^s
Feb. 10	34° 97 ^s	32° 4 ^s	54° 56 ^s	30° 5 ^s	53° 67 ^s	25° 7 ^s 1 ^m 2 ^s
20	35° 01 ^s 0 ^m 04 ^s	31° 4 ^s 1 ^m 0 ^s	54° 59 ^s 0 ^m 03 ^s	29° 0 ^s 1 ^m 6 ^s	53° 68 ^s 0 ^m 01 ^s	24° 5 ^s 1 ^m 2 ^s
Mar. 2	35° 08 ^s 0 ^m 07 ^s	30° 6 ^s 0 ^m 8 ^s	54° 64 ^s 0 ^m 05 ^s	27° 3 ^s 1 ^m 7 ^s	53° 72 ^s 0 ^m 04 ^s	23° 5 ^s 1 ^m 0 ^s
12	35° 19 ^s 0 ^m 11 ^s	30° 1 ^s 0 ^m 5 ^s	54° 75 ^s 0 ^m 11 ^s	25° 2 ^s 2 ^m 1 ^s	53° 81 ^s 0 ^m 09 ^s	22° 7 ^s 0 ^m 8 ^s
		0 ^m 14 ^s		0 ^m 14 ^s	0 ^m 12 ^s	0 ^m 0 ^s
22	35° 33 ^s	29° 9 ^s	54° 89 ^s	23° 2 ^s 2 ^m 2 ^s	53° 93 ^s	22° 2 ^s 0 ^m 2 ^s
Apr. 1	35° 50 ^s 0 ^m 17 ^s	29° 9 ^s 0 ^m 0 ^s	55° 07 ^s 0 ^m 18 ^s	21° 0 ^s 2 ^m 2 ^s	54° 08 ^s 0 ^m 15 ^s	22° 0 ^s 0 ^m 2 ^s
11	35° 71 ^s 0 ^m 21 ^s	30° 3 ^s 0 ^m 4 ^s	55° 28 ^s 0 ^m 21 ^s	18° 7 ^s 2 ^m 3 ^s	54° 27 ^s 0 ^m 19 ^s	22° 1 ^s 0 ^m 1 ^s
21	35° 95 ^s 0 ^m 24 ^s	31° 0 ^s 0 ^m 7 ^s	55° 53 ^s 0 ^m 25 ^s	16° 4 ^s 2 ^m 3 ^s	54° 50 ^s 0 ^m 23 ^s	22° 6 ^s 0 ^m 5 ^s
		0 ^m 27 ^s		0 ^m 28 ^s	0 ^m 26 ^s	0 ^m 0 ^s
May 1	36° 22 ^s	32° 1 ^s	55° 81 ^s	14° 1 ^s 2 ^m 3 ^s	54° 76 ^s	23° 4 ^s 1 ^m 2 ^s
11	36° 51 ^s 0 ^m 29 ^s	33° 5 ^s 1 ^m 4 ^s	56° 12 ^s 0 ^m 31 ^s	11° 8 ^s 2 ^m 3 ^s	55° 04 ^s 0 ^m 28 ^s	24° 6 ^s 1 ^m 2 ^s
21	36° 82 ^s 0 ^m 31 ^s	33° 5 ^s 1 ^m 6 ^s	56° 45 ^s 0 ^m 33 ^s	9° 6 ^s 2 ^m 2 ^s	55° 35 ^s 0 ^m 31 ^s	26° 1 ^s 1 ^m 2 ^s
31	37° 14 ^s 0 ^m 32 ^s	37° 0 ^s 1 ^m 9 ^s	56° 80 ^s 0 ^m 35 ^s	7° 6 ^s 2 ^m 0 ^s	55° 67 ^s 0 ^m 32 ^s	27° 9 ^s 1 ^m 8 ^s
		0 ^m 31 ^s		0 ^m 35 ^s	0 ^m 32 ^s	1 ^m 3 ^s
June 10	37° 45 ^s	39° 1 ^s 2 ^m 1 ^s	57° 15 ^s 0 ^m 35 ^s	5° 8 ^s 1 ^m 8 ^s	55° 99 ^s 0 ^m 32 ^s	29° 8 ^s 2 ^m 2 ^s
20	37° 77 ^s 0 ^m 32 ^s	41° 2 ^s 2 ^m 1 ^s	57° 50 ^s 0 ^m 34 ^s	4° 2 ^s 1 ^m 6 ^s	56° 31 ^s 0 ^m 32 ^s	32° 0 ^s 2 ^m 2 ^s
30	38° 06 ^s 0 ^m 29 ^s	43° 5 ^s 2 ^m 3 ^s	57° 84 ^s 0 ^m 34 ^s	2° 9 ^s 1 ^m 3 ^s	56° 62 ^s 0 ^m 31 ^s	34° 3 ^s 2 ^m 2 ^s
July 10	38° 34 ^s 0 ^m 28 ^s	45° 8 ^s 2 ^m 3 ^s	58° 16 ^s 0 ^m 32 ^s	2° 0 ^s 0 ^m 9 ^s	56° 91 ^s 0 ^m 29 ^s	36° 6 ^s 2 ^m 3 ^s
		0 ^m 25 ^s		0 ^m 30 ^s	0 ^m 27 ^s	2 ^m 4 ^s
20	38° 59 ^s 0 ^m 21 ^s	48° 0 ^s 2 ^m 2 ^s	58° 46 ^s 0 ^m 26 ^s	1° 4 ^s 0 ^m 6 ^s	57° 18 ^s 0 ^m 27 ^s	39° 0 ^s 2 ^m 4 ^s
30	38° 80 ^s 0 ^m 21 ^s	50° 2 ^s 2 ^m 2 ^s	58° 72 ^s 0 ^m 26 ^s	1° 1 ^s 0 ^m 3 ^s	57° 41 ^s 0 ^m 23 ^s	41° 3 ^s 2 ^m 3 ^s
Aug. 9	38° 98 ^s 0 ^m 18 ^s	52° 2 ^s 2 ^m 0 ^s	58° 93 ^s 0 ^m 21 ^s	1° 1 ^s 0 ^m 0 ^s	57° 61 ^s 0 ^m 20 ^s	43° 5 ^s 2 ^m 2 ^s
19	39° 11 ^s 0 ^m 18 ^s	54° 0 ^s 1 ^m 8 ^s	59° 10 ^s 0 ^m 17 ^s	1° 5 ^s 0 ^m 4 ^s	57° 76 ^s 0 ^m 15 ^s	45° 6 ^s 2 ^m 1 ^s
		0 ^m 09 ^s		0 ^m 12 ^s	0 ^m 11 ^s	1 ^m 3 ^s
29	39° 20 ^s	55° 6 ^s	59° 22 ^s	2° 2 ^s 0 ^m 7 ^s	57° 87 ^s 0 ^m 11 ^s	47° 5 ^s 1 ^m 3 ^s
Sept. 8	39° 25 ^s 0 ^m 05 ^s	57° 1 ^s 1 ^m 5 ^s	59° 30 ^s 0 ^m 08 ^s	3° 2 ^s 1 ^m 0 ^s	57° 95 ^s 0 ^m 08 ^s	49° 1 ^s 1 ^m 6 ^s
18	39° 26 ^s 0 ^m 01 ^s	58° 2 ^s 1 ^m 1 ^s	59° 32 ^s 0 ^m 02 ^s	4° 3 ^s 1 ^m 1 ^s	57° 98 ^s 0 ^m 08 ^s	50° 6 ^s 1 ^m 5 ^s
28	39° 23 ^s 0 ^m 03 ^s	59° 2 ^s 1 ^m 0 ^s	59° 30 ^s 0 ^m 02 ^s	5° 6 ^s 1 ^m 3 ^s	57° 97 ^s 0 ^m 01 ^s	51° 8 ^s 1 ^m 2 ^s
		0 ^m 06 ^s		0 ^m 06 ^s	0 ^m 04 ^s	1 ^m 0 ^s
Oct. 8	39° 17 ^s	59° 9 ^s	59° 24 ^s	6° 9 ^s	57° 93 ^s	52° 8 ^s 0 ^m 7 ^s
18	39° 08 ^s 0 ^m 09 ^s	60° 4 ^s 0 ^m 5 ^s	59° 14 ^s 0 ^m 10 ^s	8° 3 ^s 1 ^m 4 ^s	57° 86 ^s 0 ^m 07 ^s	53° 5 ^s 0 ^m 7 ^s
28	38° 98 ^s 0 ^m 10 ^s	60° 6 ^s 0 ^m 2 ^s	59° 02 ^s 0 ^m 12 ^s	9° 6 ^s 1 ^m 8 ^s	57° 77 ^s 0 ^m 09 ^s	54° 0 ^s 0 ^m 5 ^s
Nov. 7	38° 86 ^s 0 ^m 12 ^s	60° 6 ^s 0 ^m 0 ^s	58° 88 ^s 0 ^m 14 ^s	10° 8 ^s 1 ^m 2 ^s	57° 67 ^s 0 ^m 10 ^s	54° 2 ^s 0 ^m 2 ^s
		0 ^m 12 ^s		0 ^m 15 ^s	0 ^m 12 ^s	0 ^m 0 ^s
17	38° 74 ^s	60° 4 ^s	58° 73 ^s	11° 8 ^s	57° 55 ^s	54° 2 ^s 0 ^m 3 ^s
27	38° 62 ^s 0 ^m 12 ^s	60° 0 ^s 0 ^m 4 ^s	58° 58 ^s 0 ^m 15 ^s	12° 6 ^s 0 ^m 8 ^s	57° 43 ^s 0 ^m 12 ^s	53° 9 ^s 0 ^m 3 ^s
Dec. 7	38° 49 ^s 0 ^m 13 ^s	59° 4 ^s 0 ^m 6 ^s	58° 43 ^s 0 ^m 15 ^s	13° 1 ^s 0 ^m 5 ^s	57° 31 ^s 0 ^m 12 ^s	53° 4 ^s 0 ^m 5 ^s
17	38° 38 ^s 0 ^m 11 ^s	58° 6 ^s 0 ^m 8 ^s	58° 29 ^s 0 ^m 14 ^s	13° 4 ^s 0 ^m 3 ^s	57° 19 ^s 0 ^m 12 ^s	52° 7 ^s 0 ^m 7 ^s
		0 ^m 09 ^s		0 ^m 13 ^s	0 ^m 10 ^s	0 ^m 0 ^s
27	38° 29 ^s	57° 7 ^s	58° 16 ^s	13° 4 ^s	57° 09 ^s	51° 8 ^s 0 ^m 0 ^s

APPARENT PLACES OF THE PRINCIPAL FIXED STARS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	♈ Piscium.		γ Cephei.	
	R. A.	Dec. North.	R. A.	Dec. North.
	23 ^h	4 ^o	23 ^h	76 ^o
Jan. 1	31 ^m 49 ^s 88 ^o	46 ['] 19 ["] 2 ^o	32 ^m 53 ^s 06 ^o	45 ['] 25 ["] 7 ^o
11	49 78 0 ^o 10	18 4 0 ^o 8	52 25 0 ^o 81	24 8 0 ^o 9
21	49 71 0 ^o 07	17 6 0 ^o 8	51 51 0 ^o 74	23 3 1 ^o 5
31	49 64 0 ^o 07	16 8 0 ^o 8	50 86 0 ^o 65	21 3 2 ^o 0
	0 ^o 04	0 ^o 6	0 ^o 52	2 ^o 5
Feb. 10	49 60 0 ^o 02	16 2 0 ^o 6	50 34 0 ^o 39	18 8 2 ^o 7
20	49 58 0 ^o 01	15 6 0 ^o 4	49 95 0 ^o 28	16 1 3 ^o 0
Mar. 2	49 59 0 ^o 04	15 2 0 ^o 2	49 72 0 ^o 05	13 1 3 ^o 1
12	49 63 0 ^o 09	15 0 0 ^o 0	49 67 0 ^o 15	10 0 3 ^o 3
	*	*	0 ^o 18	6 7 2 ^o 8
Apr. 22	49 72 0 ^o 12	15 3 0 ^o 3	49 82 0 ^o 32	3 9 2 ^o 6
1	49 84 0 ^o 16	15 9 0 ^o 6	50 14 0 ^o 49	45 1 3 2 ^o 2
11	50 00 0 ^o 19	16 8 1 ^o 1	50 63 0 ^o 77	44 59 1 1 ^o 7
21	50 19 0 ^o 23	17 9 1 ^o 4	52 04 0 ^o 88	57 4 1 ^o 2
May 1	50 42 0 ^o 26	19 3 1 ^o 6	52 92 0 ^o 96	56 2 0 ^o 6
11	50 68 0 ^o 29	20 9 1 ^o 9	53 88 1 ^o 00	55 6 0 ^o 0
21	51 27 0 ^o 32	22 8 1 ^o 9	54 88 1 ^o 03	55 6 0 ^o 5
31	51 59 0 ^o 32	24 7 2 ^o 1	55 91 1 ^o 02	56 1 1 ^o 1
June 10	51 91 0 ^o 31	26 8 2 ^o 1	56 93 0 ^o 99	57 2 1 ^o 6
20	52 22 0 ^o 31	28 9 2 ^o 1	57 92 0 ^o 93	44 58 8 2 ^o 1
July 30	52 53 0 ^o 28	31 0 2 ^o 0	58 85 0 ^o 84	45 0 9 2 ^o 6
July 10	52 81 0 ^o 25	33 0 2 ^o 0	32 59 69 0 ^o 74	3 5 3 ^o 0
20	53 06 0 ^o 23	35 0 1 ^o 7	33 0 43 0 ^o 63	6 5 3 ^o 2
Aug. 9	53 29 0 ^o 18	36 7 1 ^o 6	1 06 0 ^o 51	9 7 3 ^o 5
19	53 47 0 ^o 15	38 3 1 ^o 3	1 57 0 ^o 26	13 2 3 ^o 7
29	53 62 0 ^o 11	39 6 1 ^o 2	1 93 0 ^o 23	16 9 3 ^o 8
Sept. 8	53 73 0 ^o 07	40 8 0 ^o 9	2 16 0 ^o 08	20 7 3 ^o 8
18	53 80 0 ^o 03	41 7 0 ^o 6	2 24 0 ^o 05	24 5 3 ^o 8
28	53 83 0 ^o 01	42 3 0 ^o 5	2 19 0 ^o 19	28 3 3 ^o 6
Oct. 8	53 82 0 ^o 03	42 8 0 ^o 2	2 00 0 ^o 33	31 9 3 ^o 4
18	53 79 0 ^o 06	43 0 0 ^o 0	1 67 0 ^o 45	35 3 3 ^o 1
28	53 73 0 ^o 08	43 0 0 ^o 1	1 22 0 ^o 56	38 4 2 ^o 7
Nov. 7	53 65 0 ^o 09	42 9 0 ^o 3	0 66 0 ^o 65	41 1 2 ^o 3
17	53 56 0 ^o 10	42 6 0 ^o 5	33 0 01 0 ^o 74	43 4 1 ^o 8
27	53 46 0 ^o 11	42 1 0 ^o 6	32 59 27 0 ^o 79	45 2 1 ^o 3
Dec. 7	53 35 0 ^o 11	41 5 0 ^o 6	58 48 0 ^o 84	46 5 0 ^o 6
17	53 24 0 ^o 11	40 9 0 ^o 8	57 64 0 ^o 84	47 1 0 ^o 0
27	53 13 0 ^o 10	40 1 0 ^o 8	56 80 0 ^o 82	47 1 0 ^o 6
37	31 53 03 0 ^o 10	46 39 3 0 ^o 8	32 55 98 0 ^o 82	45 46 5 0 ^o 6

TABLE,

Showing the *Correction* to be applied to the *preceding* Apparent Places of Five Polar Stars, for the terms of Nutation involving 2ζ .

Arg.	α URS. MIN.		51 Cephei.		σ Octantis.		δ URS. MIN.		λ URS. MIN.		Arg.	
	ζ		R. A.	Dec.	R. A.	Dec.	R. A.	Dec.	R. A.	Dec.		ζ
0	180	-211	+02	+011	+09	-114	-09	-011	-09	-168	-07	90
1	181	-213	-02	-007	-09	-129	-09	-008	-09	-161	-07	91
2	182	-215	-02	+002	+09	-144	-09	-006	-09	-154	-08	92
3	183	-217	-02	-002	-09	-157	-09	-008	-09	-147	-08	93
4	184	-218	-01	-007	-09	-172	-08	-000	-09	-139	-08	94
5	185	-219	-01	-011	-09	-186	-08	+008	-09	-131	-08	95
6	186	-220	-01	-016	-09	-200	-08	-008	-09	-123	-08	96
7	187	-221	-00	-020	-09	-214	-08	-008	-09	-116	-08	97
8	188	-221	-00	-025	-09	-227	-08	-011	-09	-107	-08	98
9	189	-221	-00	-030	-09	-239	-08	-014	-09	-100	-08	99
10	190	-220	+00	-034	-09	-252	-08	-017	-09	-091	-08	100
11	191	-220	-01	-038	-09	-265	-07	-019	-09	-083	-09	101
12	192	-219	-01	-042	-09	-277	-07	-022	-09	-074	-09	102
13	193	-218	-01	-046	-08	-288	-07	-024	-08	-065	-09	103
14	194	-216	-02	-050	-08	-300	-07	-027	-08	-056	-09	104
15	195	-215	-02	-055	-08	-311	-07	-029	-08	-047	-09	105
16	196	-213	-02	-059	-08	-322	-06	-032	-08	-039	-09	106
17	197	-211	-02	-063	-08	-332	-06	-035	-08	-030	-09	107
18	198	-209	-03	-066	-08	-341	-06	-037	-08	-021	-09	108
19	199	-206	-03	-070	-08	-351	-06	-039	-08	-012	-09	109
20	200	-204	-03	-074	-07	-360	-05	-042	-07	-004	-09	110
21	201	-200	-03	-078	-07	-369	-05	-044	-07	+005	-09	111
22	202	-197	-04	-081	-07	-377	-05	-046	-07	-014	-09	112
23	203	-194	-04	-084	-07	-384	-05	-048	-07	-023	-09	113
24	204	-189	-04	-088	-07	-391	-04	-051	-07	-033	-08	114
25	205	-186	-05	-091	-06	-398	-04	-053	-06	-042	-08	115
26	206	-181	-05	-094	-06	-404	-04	-055	-06	-051	-08	116
27	207	-177	-05	-097	-06	-410	-04	-057	-06	-059	-08	117
28	208	-172	-05	-100	-06	-416	-03	-059	-06	-068	-08	118
29	209	-167	-05	-103	-05	-420	-03	-061	-06	-076	-08	119
30	210	-161	-06	-106	-05	-424	-03	-063	-05	-085	-08	120
31	211	-156	-06	-108	-05	-428	-02	-064	-05	-093	-08	121
32	212	-151	-06	-110	-05	-431	-02	-065	-05	-101	-08	122
33	213	-145	-06	-113	-04	-433	-02	-067	-04	-110	-07	123
34	214	-139	-06	-115	-04	-436	-01	-068	-04	-118	-07	124
35	215	-133	-07	-117	-04	-437	-01	-069	-04	-126	-07	125
36	216	-127	-07	-119	-04	-438	-01	-071	-04	-133	-07	126
37	217	-120	-07	-120	-03	-438	-01	-072	-03	-141	-07	127
38	218	-114	-07	-121	-03	-439	-00	-073	-03	-148	-07	128
39	219	-108	-07	-123	-03	-439	-00	-074	-03	-156	-06	129
40	220	-101	-07	-124	-02	-438	-00	-075	-02	-163	-06	130
41	221	-093	-07	-125	-02	-436	+01	-076	-02	-170	-06	131
42	222	-087	-08	-126	-02	-434	-01	-077	-02	-176	-06	132
43	223	-080	-08	-127	-01	-431	-01	-077	-02	-183	-05	133
44	224	-072	-08	-128	-01	-428	-02	-078	-01	-189	-05	134
45	225	-065	-08	-128	+01	-424	+02	+078	-01	+195	-05	135

NOTE.—When the *Argument* is on the *right-hand* side of the Table, the sign of the *correction* must be changed.

TABLE,

Showing the *Correction* to be applied to the *preceding* Apparent Places of Five Polar Stars, for the terms of Nutation involving 2 ζ .

Arg.		α Urs. MIN.		51 Cephei.		σ Octantis.		δ Urs. MIN.		λ Urs. Min.		Arg.	
		R. A.	Dec.	R. A.	Dec.	R. A.	Dec.	R. A.	Dec.	R. A.	Dec.		
ζ	ζ											ζ	ζ
55	225	-065	-08	128	+01	424	+02	+078	-01	+195	-05	135	315
56	226	058	08	128	00	420	02	078	01	201	05	136	316
57	227	050	08	129	00	415	03	079	00	207	04	137	317
58	228	043	08	129	+00	410	03	079	00	212	04	138	318
59	229	035	08	129	-01	404	03	079	-00	216	04	139	319
60	230	027	08	128	01	398	03	079	+01	221	04	140	320
61	231	020	08	127	01	391	04	079	01	226	03	141	321
62	232	012	08	127	02	383	04	079	01	230	03	142	322
63	233	-004	08	126	02	376	04	078	02	233	03	143	323
64	234	+003	08	125	02	368	05	078	02	237	02	144	324
65	235	011	08	124	02	359	05	077	02	240	02	145	325
66	236	019	08	123	03	350	05	076	03	243	02	146	326
67	237	027	08	121	03	341	05	075	03	246	02	147	327
68	238	035	08	120	03	331	06	075	03	249	01	148	328
69	239	042	08	118	04	320	06	074	03	251	01	149	329
70	240	049	08	116	04	310	06	073	04	253	01	150	330
71	241	057	08	115	04	300	06	072	04	254	00	151	331
72	242	064	08	112	04	288	07	071	04	256	00	152	332
73	243	071	08	110	05	276	07	069	05	257	-00	153	333
74	244	079	08	108	05	264	07	068	05	257	+01	154	334
75	245	086	08	105	05	252	07	067	05	257	01	155	335
76	246	093	07	102	06	239	07	065	05	257	01	156	336
77	247	100	07	100	06	226	07	064	06	257	02	157	337
78	248	107	07	097	06	213	08	062	06	256	02	158	338
79	249	114	07	094	06	199	08	060	06	255	02	159	339
80	250	120	07	090	06	186	08	058	06	254	02	160	340
81	251	126	07	088	07	172	08	057	06	252	03	161	341
82	252	133	07	084	07	157	08	055	07	251	03	162	342
83	253	139	06	081	07	142	08	053	07	248	03	163	343
84	254	145	06	077	07	128	08	051	07	245	04	164	344
85	255	151	06	074	07	112	09	049	07	243	04	165	345
86	256	156	06	070	08	098	09	047	08	240	04	166	346
87	257	162	06	066	08	084	09	044	08	236	04	167	347
88	258	167	05	062	08	069	09	042	08	232	05	168	348
89	259	172	05	058	08	053	09	039	08	229	05	169	349
90	260	176	05	054	08	038	09	037	08	225	05	170	350
81	261	181	05	050	08	023	09	034	08	220	05	171	351
82	262	185	04	045	08	007	09	032	08	215	06	172	352
83	263	189	04	042	09	+008	09	030	08	210	06	173	353
84	264	192	04	038	09	024	09	027	09	205	06	174	354
85	265	197	04	033	09	038	09	025	09	199	06	175	355
86	266	200	03	029	09	054	09	022	09	193	06	176	356
87	267	203	03	024	09	069	09	019	09	187	07	177	357
88	268	205	03	020	09	084	09	016	09	182	07	178	358
89	269	209	03	015	09	099	09	014	09	175	07	179	359
90	270	+211	-02	-011	-09	+114	+09	+011	+09	+168	+07	180	360

NOTE.—When the *Argument* is on the *right-hand* side of the Table, the sign of the correction must be changed.

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of ☉'s R. A. in 1 hour of Long.	Sidereal Time of ☉'s Sem. pas. mer.	Declination.	Var. of ☉'s Dec. in 1 hour of Long.
1842.			h m s			o ' "	
Jan. 1	34 Sextantis *	6	10 34 28·07			N. 4 25	
	χ Leonis - *	4.5	10 56 53·36			8 12	
	Moon II. L.	- -	10 47 54·66	134·03	67·72	3 58 18·0	-987·0
	Moon II. U.	20·3	11 14 27·81	131·64	67·12	0 41 3·0	983·2
	ν Leonis - -	4.5	11 28 52·98			0 3	
	β Virginis -	3.4	11 42 29·45			N. 2 39	
2	ν Leonis - -	4.5	11 28 53·01			N. 0 3	
	β Virginis -	3.4	11 42 29·48			N. 2 39	
	Moon II. L.	- -	11 40 37·37	130·09	66·73	S. 2 34 5·0	-966·1
	Moon II. U.	21·3	12 6 33·29	129·36	66·54	5 44 34·7	937·0
	q Virginis -	5.6	12 25 38·71			8 35	
	ψ Virginis -	5.6	12 46 9·64			S. 8 41	
3	q Virginis -	5.6	12 25 38·75			S. 8 35	
	ψ Virginis -	5.6	12 46 9·67			8 41	
	Moon II. L.	- -	12 32 24·93	129·37	66·53	8 48 8·6	-896·9
	Moon II. U.	22·4	12 58 20·88	130·06	66·71	11 42 41·0	846·9
	α Virginis -	1	13 16 53·42			10 20	
	z Virginis -	5.6	13 41 18·25			S. 17 20	
4	α Virginis -	1	13 16 53·45			S. 10 20	
	z Virginis -	5.6	13 41 18·28			17 20	
	Moon II. L.	- -	13 24 28·66	131·32	67·03	14 26 15·1	-787·3
	Moon II. U.	23·4	13 50 54·38	133·03	67·45	16 57 0·3	718·8
	λ Virginis -	4	14 10 34·91			S. 12 38	
5	λ Virginis -	4	14 10 34·94			S. 12 38	
	Moon II. L.	- -	14 17 42·50	135·03	67·95	19 13 12·7	-641·9
	Moon II. U.	24·4	14 44 55·51	137·14	68·46	21 13 14·3	557·1
	ι Libræ - -	5.6	15 3 13·90			19 11	
	χ Libræ - -	5.6	15 30 57·32			S. 23 18	
6	ι Libræ - -	5.6	15 3 13·93			S. 19 11	
	χ Libræ - -	5.6	15 30 57·35			23 18	
	Moon II. L.	- -	15 12 33·64	139·18	68·96	22 55 34·7	-463·2
	Moon II. U.	25·5	15 40 34·66	140·93	69·37	24 18 54·1	367·2
	ν Scorpii -	4	16 2 49·38			19 3	
	α Scorpii -	1	16 19 43·80			S. 26 5	
7	Moon II. L.	- -	16 8 53·91	142·18	69·65	S. 25 22 7·7	-264·4
	Moon II. U.	26·5	16 37 24·48	142·79	69·77	26 4 28·6	158·7
8	Moon II. L.	- -	17 5 57·81	142·63	69·69	S. 26 25 32·6	- 52·0
	Moon II. U.	27·5	17 34 24·28	141·65	69·40	26 25 20·4	+ 53·7
9	Moon II. L.	- -	18 2 34·21	139·88	68·93	S. 26 4 16·9	+156·2
	Moon II. U.	28·6	18 30 18·69	137·43	68·28	25 23 11·9	253·7
10	Moon II. L.	- -	18 57 30·29	134·43	67·49	S. 24 23 15·3	+344·5

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of ☉'s R. A. in 1 hour of Long.	Sidereal Time of ☉'s Sem. pas. mer.	Declination.	Var. of ☉'s Dec. in 1 hour of Long.
1842. Jan. 11	Moon II. u.	29·6	^h 19 ^m 24 ^s 3·58	131·07	66·61	S. 23° 5' 54" 0	+427·7
	Moon I. L.	- -	19 47 43·98	127·70	65·68	21 32 43·9	502·5
12	Moon I. u.	0·9	20 12 55·13	124·17	64·75	S. 19 45 28·0	+568·6
	Moon I. L.	- -	20 37 24·77	120·80	63·84	17 45 50·6	626·2
13	Moon I. u.	1·9	21 1 15·51	117·71	63·03	S. 15 35 32·8	+675·3
	Moon I. L.	- -	21 24 31·41	115·01	62·31	13 16 14·1	716·5
14	Moon I. u.	2·9	21 47 17·66	112·78	61·72	S. 10 49 25·4	+750·3
	Moon I. L.	- -	22 9 40·22	111·08	61·28	8 16 34·2	777·1
15	θ Aquarii -	4.5	22 8 29·54			S. 8 34	
	ζ Aquarii -	4	22 20 41·71			0 50	
	Moon I. u.	3·9	22 31 45·79	109·95	61·00	5 39 2·0	+797·2
	Moon I. L.	- -	22 53 41·51	109·44	60·89	2 58 6·0	811·1
	λ Aquarii -	4	22 44 22·39			S. 8 25	
	β Piscium -	5	22 55 50·44			N. 2 58	
16	λ Aquarii -	4	22 44 22·38			S. 8 25	
	β Piscium -	5	22 55 50·44			N. 2 58	
	Moon I. u.	5·0	23 15 34·95	109·58	60·98	S. 0 15 0·4	+818·8
	Moon I. L.	- -	23 37 34·04	110·39	61·25	N. 2 29 1·5	820·5
ε Piscium *	4.5	23 31 49·74			N. 4 46		
17	ε Piscium *	4.5	23 31 49·74			N. 4 46	
	Moon I. u.	6·0	23 59 47·13	111·91	61·73	5 12 44·9	+815·7
	Moon I. L.	- -	0 22 22·87	114·17	62·40	7 54 51·1	804·2
	d Piscium *	5.6	0 12 28·95			N. 7 19	
18	d Piscium *	5.6	0 12 28·94			N. 7 19	
	Moon I. u.	7·0	0 45 30·11	117·17	63·27	10 33 54·7	+785·1
	Moon I. L.	- -	1 9 17·94	120·93	64·33	13 8 20·6	757·7
	γ Piscium -	4	1 23 3·25			N. 14 32	
19	γ Piscium -	4	1 23 3·23			N. 14 32	
	Moon I. u.	8·0	1 33 55·38	125·43	65·57	15 36 20·7	+720·6
	Moon I. L.	- -	1 59 31·09	130·63	66·98	17 55 51·3	672·5
	β Arietis -	3	1 45 56·47			20 2	
	θ ¹ Arietis -	6	2 9 22·21			N. 19 10	
20	β Arietis -	3	1 45 56·45			N. 20 2	
	θ ¹ Arietis -	6	2 9 22·20			19 10	
	Moon I. u.	9·1	2 26 12·94	136·43	68·50	20 4 30·6	+611·8
	Moon I. L.	- -	2 54 7·07	142·65	70·09	21 59 38·1	+537·0
	ε Arietis -	5	2 50 12·86			20 42	
	δ Arietis -	4	3 2 37·72			N. 19 7	
21	ε Arietis -	5	2 50 12·85			N. 20 42	

Date.	Name.	Mag- nitude.	At Greenwich Transit.					Declination.	Var. of ☉'s Dec in 1 hour of Long.
			Apparent Right Ascension in Time.	Var. of ☉'s R. A. in 1 hour of Long.	Sidereal Time of ☉'s Sem. pas. mer.				
1842. Jan. 21	♃ Aristis - -	4	h m s						
	Moon I. U.	10.1	3 2 37.70			N.19 7			
	Moon I. L.	- -	3 23 17.17	149.04	71.69	23 38 17.0	+446		
	♈ Tauri - -	3	3 53 43.31	155.26	78.20	24 57 18.4	340		
	♁ Tauri - -	3	3 58 8.09			23 37			
	♂ Tauri - -	5	3 55 23.63			N.21 39			
22	♈ Tauri - -	3	3 58 8.08			N.23 37			
	♁ Tauri - -	5	3 55 23.62			21 39			
	Moon I. U.	11.2	4 25 20.89	160.87	74.53	25 53 32.3	+219		
	Moon I. L.	- -	4 58 0.04	165.44	75.58	26 24 1.1	+83		
	♈ Tauri - -	4.5	4 53 41.65			21 22			
	♁ Tauri - -	2	5 16 21.04			N.28 28			
23	♈ Tauri - -	4.5	4 53 41.64			N.21 22			
	♁ Tauri - -	2	5 16 21.03			28 28			
	Moon I. U.	12.2	5 31 25.65	168.55	76.27	26 26 19.5	-62		
	Moon I. L.	- -	6 5 18.49	169.94	76.54	25 58 50.1	213		
	H Geminor.	5	5 54 33.60			23 16			
	μ Geminor.	3	6 13 26.71			N.22 35			
24	H Geminor.	5	5 54 33.60			N.23 16			
	μ Geminor.	3	6 13 26.71			22 35			
	Moon I. U.	13.3	6 39 17.22	169.54	76.40	25 1 3.3	-364		
	Moon I. L.	- -	7 13 1.05	167.50	75.88	23 33 39.5	508		
	♊ Geminor.	3.4	7 10 43.80			22 16			
	κ Geminor.	4	7 34 56.96			N.24 46			
25	♊ Geminor.	3.4	7 10 43.80			N.22 16			
	κ Geminor.	4	7 34 56.94			24 46			
	Moon I. U.	14.3	7 46 12.03	164.14	75.04	21 38 32.7	-640		
	Moon I. L.	- -	8 18 37.02	159.91	74.00	19 18 35.1	756		
	♌ Cancri - -	5.6	8 22 37.60			18 37			
	♃ Cancri - -	4.5	8 35 44.69			N.18 44			
26	♌ Cancri - -	5.6	8 22 37.61			N.18 37			
	♃ Cancri - -	4.5	8 35 44.70			18 44			
	Moon II. U.	15.3	8 52 33.95	155.07	72.86	16 37 25.9	-852		
	ξ Leonis - *	5	9 23 28.17			12 0			
	ο Leonis - *	4	9 32 45.49			N.10 36			
27	ξ Leonis - *	5	9 23 28.18			N.12 0			
	ο Leonis - *	4	9 32 45.50			10 36			
	Moon II. L.	- -	9 23 6.63	150.41	71.72	13 39 9.2	-927		
	Moon II. U.	16.4	9 52 45.04	146.07	70.65	10 28 2.6	-980		
	γ Leonis - -	2	10 11 17.62			20 38			
	ρ Leonis - *	4	10 24 31.71			N.10 7			
28	γ Leonis - -	2	10 11 17.64			N.20 38			
	ρ Leonis - *	4	10 24 31.73			N.10 7			

MOON-CULMINATING STARS. 483

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem- pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842.			h m s			° ' "	
Jan. 28	Moon II. L.	- -	10 21 34.44	142.28	69.70	N. 7 8 18.3	-1013.4
	Moon II. U.	17.4	10 49 42.33	139.16	68.93	3 43 59.0	1026.7
	♄ Leonis - *	4	11 13 1.62			6 54	
	♃ Leonis - -	4.5	11 28 53.76			N. 0 3	
29	♄ Leonis - *	4	11 13 1.64			N. 6 54	
	♃ Leonis - -	4.5	11 28 53.79			0 3	
	Moon II. L.	- -	11 17 17.35	136.81	68.34	N. 0 18 48.7	-1022.1
	Moon II. U.	18.4	11 44 28.72	135.22	67.96	S. 3 3 47.8	1001.5
	♄ Virginis -	3.4	12 11 51.34			N. 0 13	
	♃ Virginis -	5.6	12 25 39.56			S. 8 35	
30	♄ Virginis -	3.4	12 11 51.36			N. 0 13	
	♃ Virginis -	5.6	12 25 39.59			S. 8 35	
	Moon II. L.	- -	12 11 25.51	134.37	67.76	6 20 48.6	-966.4
	Moon II. U.	19.5	12 38 16.34	134.21	67.73	9 29 29.8	918.5
	♄ Virginis -	4.5	13 1 48.41			4 42	
	♃ Virginis -	1	13 16 54.31			S. 10 20	
31	♄ Virginis -	4.5	13 1 48.43			S. 4 42	
	♃ Virginis -	1	13 16 54.34			10 20	
	Moon II. L.	- -	13 5 9.00	134.66	67.88	12 27 26.7	-859.2
	Moon II. U.	20.5	13 32 10.02	135.59	68.13	15 12 30.4	789.8
	♄ Virginis -	5.6	13 41 19.20			17 21	
	♃ Virginis -	4	14 10 35.82			S. 12 38	
Feb. 1	♄ Virginis -	5.6	13 41 19.24			S. 17 21	
	♃ Virginis -	4	14 10 35.85			12 38	
	Moon II. L.	- -	13 59 24.49	136.87	68.48	17 42 46.0	-711.4
	Moon II. U.	21.6	14 26 55.77	138.36	68.86	19 56 32.2	625.1
	♄ Libræ - -	3	14 42 10.21			15 23	
	♃ Libræ - -	3.4	14 54 51.78			S. 24 39	
2	♄ Libræ - -	3	14 42 10.25			S. 15 23	
	♃ Libræ - -	3.4	14 54 51.81			24 39	
	Moon II. L.	- -	14 54 45.15	139.86	69.25	21 52 20.6	-531.9
	Moon II. U.	22.6	15 22 51.76	141.20	69.58	23 28 56.4	433.2
	♄ Scorpii -	3.4	15 49 19.40			25 39	
	♃ Scorpii -	2	15 56 16.49			S. 19 22	
3	♄ Scorpii -	3.4	15 49 19.43			S. 25 39	
	♃ Scorpii -	2	15 56 16.52			19 22	
	Moon II. L.	- -	15 51 12.55	142.19	69.88	24 45 20.1	-350.2
	Moon II. U.	23.6	16 19 42.44	142.69	69.93	25 40 49.6	224.5
	♄ Ophiuchi -	4.5	17 5 39.12			S. 26 22	
4	♄ Ophiuchi -	4.5	17 5 39.15			S. 26 22	
	Moon II. L.	- -	16 48 14.55	142.55	69.87	26 15 3.2	-117
	Moon II. U.	24.7	17 16 40.99	141.73	69.63	S. 26 27 58.1	-1

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of ☾'s R. A. in 1 hour of Long.	Sidereal Time of ☾'s Sem. pas. mer.	Declination.	Var. of ☾'s Dec. in 1 hour of Long.
1842.			h m s	"	"	° ' "	"
Feb. 4	D Ophiuchi -	5	17 33 58.60			S. 21 36	
	γ Sagittarii	4	17 55 40.30			30 25	
5	D Ophiuchi -	5	17 33 58.64			S. 21 36	
	γ Sagittarii	4	17 55 40.33			30 25	
	Moon II. L.	- -	17 44 53.44	140.23	69.21	26 19 55.0	+ 91.7
	Moon II. U.	25.7	18 12 43.89	138.08	68.63	25 51 34.0	190.9
	φ Sagittarii	4.5	18 35 47.45			27 9	
	σ Sagittarii	3	18 45 28.37			S. 26 29	
6	Moon II. L.	- -	18 40 5.36	135.42	67.91	S. 25 3 54.5	+ 284.6
	Moon II. U.	26.7	19 6 52.41	132.37	67.08	23 58 9.8	371.6
7	Moon II. L.	- -	19 33 1.35	129.10	66.18	S. 22 35 46.0	+ 451.1
	Moon II. U.	27.8	19 58 30.46	125.76	65.27	20 58 15.5	522.6
8	Moon II. L.	- -	20 23 19.83	122.50	64.35	S. 19 7 14.8	+ 586.1
	Moon II. U.	28.8	20 47 31.19	119.44	63.51	17 4 21.3	641.4
9	Moon II. L.	- -	21 11 7.54	116.68	62.73	S. 14 51 12.5	+ 688.8
10	Moon II. U.	0.0	21 34 13.06	114.31	62.06	S. 12 29 21.9	+ 728.4
	Moon I. L.	- -	21 54 49.79	112.47	61.53	10 0 20.4	760.6
11	Moon I. U.	1.0	22 17 10.24	111.02	61.14	S. 7 25 35.1	+ 785.7
	Moon I. L.	- -	22 39 16.47	110.11	60.89	4 46 30.8	803.8
12	Moon I. U.	2.1	23 1 15.05	109.75	60.82	S. 2 4 30.0	+ 815.2
	Moon I. L.	- -	23 23 12.92	109.99	60.92	N. 0 39 7.0	819.9
13	Moon I. U.	3.1	23 45 17.28	110.84	61.20	N. 3 22 59.5	+ 817.7
	Moon I. L.	- -	0 7 35.57	112.32	61.67	6 5 45.0	808.7
14	E Piscium *	6	0 1 54.88			N. 10 16	
	d Piscium *	5.6	0 12 28.73			7 19	
	Moon I. U.	4.1	0 30 15.50	114.45	62.30	8 45 58.9	+ 792.3
	Moon I. L.	- -	0 53 24.86	117.22	63.12	11 22 9.6	768.1
	ε Piscium *	4	0 54 45.54			N. 7 2	
15	ε Piscium *	4	0 54 45.53			N. 7 2	
	Moon I. U.	5.2	1 17 11.45	120.65	64.11	13 52 40.2	+ 735.5
	Moon I. L.	- -	1 41 42.97	124.70	65.25	16 15 43.7	693.5
	π Piscium *	6	1 28 44.51			11 20	
	β Arietis - -	3	1 45 56.11			N. 20 2	
16	π Piscium *	6	1 28 44.50			N. 11 20	
	β Arietis - -	3	1 45 56.09			20 2	
	Moon I. U.	6.2	2 7 6.58	129.32	66.54	18 29 22.2	+ 641.1
	Moon I. L.	- -	2 33 28.60	134.41	67.91	N. 20 31 25.8	+ 577.5

MOON-CULMINATING STARS. 485

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842. Feb. 16	ν Arietis - -	5.6	h m s 2 29 52.00	'	'	N.21° 16' "	"
	ε Arietis - -	5	2 50 12.47			20 42	
17	ν Arietis - -	5.6	2 29 51.98			N.21 16	
	ε Arietis - -	5	2 50 12.45			20 42	
	Moon I. U.	7.2	3 0 53.76	139.82	69.34	22 19 32.4	+501.5
	Moon I. L.	- -	3 29 24.64	145.33	70.76	23 51 9.2	412.4
	g Arietis - -	5.6	3 15 0.50			24 10	
	η Tauri - -	3	3 38 7.69			N.23 37	
18	g Arietis - -	5.6	3 15 0.49			N.24 10	
	η Tauri - -	3	3 38 7.67			23 37	
	Moon I. U.	8.3	3 59 0.94	150.67	72.11	25 3 38.2	+310.1
	Moon I. L.	- -	4 29 38.64	155.50	73.30	25 54 22.0	195.0
	ν ¹ Tauri - -	5	4 16 52.99			22 27	
	τ Tauri - -	5	4 32 47.90			N.22 39	
19	ν ¹ Tauri - -	5	4 16 52.97			N.22 27	
	τ Tauri - -	5	4 32 47.88			22 39	
	Moon I. U.	9.3	5 1 9.69	159.50	74.27	26 20 54.5	+ 68.6
	Moon I. L.	- -	5 33 22.14	162.36	74.93	26 21 14.6	- 66.5
	β Tauri - -	2	5 16 20.68			28 28	
	C Tauri - -	4.5	5 43 26.25			N.27 34	
20	β Tauri - -	2	5 16 20.70			N.28 28	
	C Tauri - -	4.5	5 43 26.24			27 34	
	Moon I. U.	10.3	6 6 1.06	163.88	75.27	25 53 57.7	-206.8
	Moon I. L.	- -	6 38 49.83	164.00	75.25	24 58 27.5	347.9
	ε Geminor.	3	6 34 15.18			25 17	
	ζ Geminor.	4	6 54 46.75			N.20 48	
21	ε Geminor.	3	6 34 15.17			N.25 17	
	ζ Geminor.	4	6 54 46.74			20 48	
	Moon I. U.	11.4	7 11 32.03	162.82	74.92	23 35 3.1	-485.1
	Moon I. L.	- -	7 43 53.22	160.55	74.33	21 44 59.7	613.7
	ν Geminor.	5	7 26 13.65			27 15	
	β Geminor.	2	7 35 41.34			N.28 24	
22	ν Geminor.	5	7 26 13.64			N.27 15	
	β Geminor.	2	7 35 41.33			28 24	
	Moon I. U.	12.4	8 15 42.31	157.53	73.54	19 30 24.9	-729.7
	Moon I. L.	- -	8 46 52.21	154.09	72.65	16 54	0.0
	δ Cancri - -	4.5	8 35 44.80			18 4	
	α ² Cancri - *	5	8 49 53.15			N.12	
23	δ Cancri - -	4.5	8 35 44.80			N.18	
	α ² Cancri - *	5	8 49 53.15			18	
	Moon I. U.	13.5	9 17 20.17	150.58	71.75	1	
	Moon I. L.	- -	9 47 6.95	147.27	70.89	N	

Date.	Name.	Mag- nitude.	At Greenwich Transit.					Var. of C's Dec. in 1 hour of Long.
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.		
1842.			h m s	"	"	o ' "	"	
Feb. 23	• Leonis - *	4	9 32 45.74			N. 10 36		
	* Leonis - *	1	10 0 0.05			12 44		
24	• Leonis - *	4	9 32 45.74			N. 10 36		
	* Leonis - *	1	10 0 0.06			12 44		
	Moon I. v.	14.5	10 16 16.33	144.37	70.15	7 30 59.8	— 1017.7	
	48 Leonis - *	5.6	10 26 36.19			7 46		
	χ Leonis - *	4.5	10 56 54.53			N. 8 11		
25	48 Leonis - *	5.6	10 26 36.21			N. 7 46		
	χ Leonis - *	4.5	10 56 54.54			8 11		
	Moon II. L.	-	10 47 13.17	141.94	69.54	4 4 56.2	— 1039.3	
	Moon II. v.	15.5	11 15 25.77	140.26	69.11	0 36 19.9	1043.3	
	v Leonis - -	4.5	11 28 54.28			0 3		
	β Virginis -	3.4	11 42 30.81			N. 2 39		
26	v Leonis - -	4.5	11 28 54.29			N. 0 3		
	β Virginis -	3.4	11 42 30.82			N. 2 39		
	Moon II. L.	-	11 43 22.14	139.25	68.85	S. 2 51 2.0	— 1027.7	
	Moon II. v.	16.6	12 11 10.27	138.88	68.77	6 13 35.2	995.2	
	q Virginis -	5.6	12 25 40.22			8 35		
	ψ Virginis -	5.6	12 46 11.20			S. 8 41		
27	q Virginis -	5.6	12 25 40.23			S. 8 35		
	ψ Virginis -	5.6	12 46 11.21			8 41		
	Moon II. L.	-	12 38 57.53	139.09	68.84	9 28 3.1	— 947.0	
	Moon II. v.	17.6	13 6 50.38	139.80	69.04	12 31 26.2	884.6	
	α Virginis -	1	13 16 55.04			10 20		
	z Virginis -	5.6	13 41 19.98			S. 17 21		
28	α Virginis -	1	13 16 55.07			S. 10 20		
	z Virginis -	5.6	13 41 20.00			17 21		
	Moon II. L.	-	13 34 54.10	140.87	69.34	15 21 4.6	— 809.8	
	Moon II. v.	18.6	14 3 12.15	142.16	69.69	17 54 39.1	724.3	
	α ^s Libræ - -	3	14 42 11.04			15 23		
	β ^s Libræ - -	3.4	14 54 52.68			S. 24 39		
Mar. 1	α ^s Libræ - -	3	14 42 11.07			S. 15 23		
	β ^s Libræ - -	3.4	14 54 52.71			24 39		
	Moon II. L.	-	14 31 46.07	143.49	70.05	20 10 10.2	— 629.6	
	Moon II. v.	19.7	15 0 35.22	144.67	70.37	22 5 59.6	527.6	
	κ Libræ - -	5	15 32 53.25			19 10		
	τ Scorpii -	3.4	15 49 20.33			S. 25 39		
2	κ Libræ - -	5	15 32 53.28			S. 19 10		
	τ Scorpii -	3.4	15 49 20.36			25 39		
	Moon II. L.	-	15 29 36.74	145.51	70.60	23 40 52.6	— 420.5	
	Moon II. v.	20.7	15 58 45.59	145.86	70.71	24 53 57.3	— 310.9	
	α Scorpii -	1	16 19 45.66			26 5		
	τ Scorpii -	3.4	16 26 5.29			S. 27 53		

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
842. Nov. 3	α Scorpii -	1	16 19 45.69			S. 26 5 "	
	γ Scorpii -	3.4	16 26 5.33			27 53	
	Moon II. L.	- -	16 27 54.99	145.59	70.65	26 13 18.4	-198.2
	Moon II. v.	21.8	16 56 57.01	144.63	70.41	26 13 18.4	+ 87.4
	θ Ophiuchi -	3.4	17 12 20.22			24 50	
	ϵ^2 Ophiuchi	3	17 21 48.31			S. 23 50	
4	θ Ophiuchi -	3.4	17 12 20.26			S. 24 50	
	ϵ^2 Ophiuchi	5	17 21 48.35			23 50	
	Moon II. L.	- -	17 25 43.32	148.97	69.99	26 19 55.0	+ 20.7
	Moon II. v.	22.8	17 54 5.82	140.68	69.40	26 5 19.4	124.4
	μ^1 Sagittarii	3.4	18 4 20.22			21 6	
	λ Sagittarii	4	18 18 14.53			S. 25 30	
5	μ^1 Sagittarii	3.4	18 4 20.26			S. 21 6	
	λ Sagittarii	4	18 18 14.56			25 30	
	Moon II. L.	- -	18 21 57.53	137.86	68.66	25 30 33.2	+222.2
	Moon II. v.	23.8	18 49 12.96	134.66	67.82	24 36 53.3	313.2
	ν Sagittarii	4.5	19 0 23.04			21 16	
	κ^2 Sagittarii	4.5	19 27 6.29			S. 25 14	
6	ν Sagittarii	4.5	19 0 23.07			S. 21 16	
	κ^2 Sagittarii	4.5	19 27 6.32			25 14	
	Moon II. L.	- -	19 15 48.49	131.33	66.89	23 25 46.0	+396.7
	Moon II. v.	24.9	19 41 42.46	127.76	65.94	21 58 43.3	472.4
	α^2 Capricorni	3	20 9 17.70			13 2	
	ρ Capricorni	5	20 19 51.30			S. 18 20	
7	α^2 Capricorni	3	20 9 17.72			S. 13 2	
	ρ Capricorni	5	20 19 51.33			18 20	
	Moon II. L.	- -	20 6 54.96	124.35	65.00	20 17 19.5	+540.2
	Moon II. v.	25.9	20 31 27.74	121.16	64.09	18 23 9.5	600.2
	θ Capricorni	5.6	20 57 4.21			17 51	
	ϵ Capricorni	5	21 7 0.47			S. 15 49	
8	Moon II. L.	- -	20 55 23.96	118.27	63.27	S. 16 17 45.7	+652.5
	Moon II. v.	26.9	21 18 47.68	115.76	62.53	14 2 38.5	697.5
9	Moon II. L.	- -	21 41 43.94	113.69	61.92	S. 11 39 14.5	+735.3
	Moon II. v.	28.0	22 4 18.22	112.11	61.45	9 8 59.1	766.1
10	Moon II. L.	- -	22 26 36.63	111.04	61.12	S. 6 33 15.4	+790.1
	Moon II. v.	29.0	22 48 45.43	110.52	60.95	3 53 24.7	807.3
11	Moon II. L.	- -	23 10 51.28	110.35	60.98	S. 1 10 49.0	+817.6
12	Moon I. v.	0.2	23 30 58.65	111.11	61.11	N. 1 33 8.3	+820.8
	Moon I. L.	- -	23 53 18.33	112.27	61.45	4 17 0.8	816.8
13	Moon I. v.	1.3	0 15 55.38	114.01	61.95	N. 6 59 19.9	+805.1

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of ☉'s R. A. in 1 hour of Long.	Sidereal Time of ☉'s Sem. pas. mer.	Declination.	Var. of ☉'s Dec. in 1 hour of Long.
1842.			h m s	°	°	° ′ ″	″
Mar. 13	Moon I. L.	- -	0 38 56.85	116.34	62.63	N. 9 38 30.6	+785.3
14	Moon I. U.	2.3	1 2 29.74	119.24	63.46	N. 12 12 52.4	+756.8
	Moon I. L.	- -	1 26 40.76	122.69	64.43	14 40 37.7	719.1
15	Moon I. U.	3.3	1 51 36.19	126.63	65.53	N. 16 59 51.3	+671.4
	Moon I. L.	- -	2 17 21.42	130.97	66.72	19 8 28.4	613.0
16	♈ Arietis - -	6	2 9 21.51			N. 19 10	
	♈ Arietis - -	5.6	2 29 51.64			21 16	
	Moon I. U.	4.4	2 44 0.69	135.61	67.98	21 4 17.5	+543.3
	Moon I. L.	- -	3 11 36.40	140.35	69.25	22 45 1.5	462.1
	♌ Arietis - -	4	3 2 36.92			19 7	
	♌ Arietis - -	5.6	3 15 0.09			N. 24 10	
17	♌ Arietis - -	4	3 2 36.91			N. 19 7	
	♌ Arietis - -	5.6	3 15 0.08			24 10	
	Moon I. U.	5.4	3 40 8.64	144.99	70.47	24 8 20.3	+369.1
	Moon I. L.	- -	4 9 34.81	149.28	71.58	25 11 55.8	265.0
	♌ Tauri - -	5	3 53 22.79			21 39	
	♌ Tauri - -	5	4 16 52.55			N. 22 27	
18	♌ Tauri - -	5	3 53 22.77			N. 21 39	
	♌ Tauri - -	5	4 16 52.51			22 27	
	Moon I. U.	6.4	4 39 48.98	152.95	72.52	25 53 40.5	+150.9
	Moon I. L.	- -	5 10 42.24	155.76	73.23	26 11 44.6	+ 28.6
	♍ Tauri - -	2	5 16 20.23			28 28	
	♍ Tauri - -	3.4	5 28 13.93			N. 21 2	
19	♍ Tauri - -	2	5 16 20.21			N. 28 28	
	♍ Tauri - -	3.4	5 28 13.91			21 2	
	Moon I. U.	7.5	5 42 3.05	157.52	73.67	26 4 44.6	- 99.3
	Moon I. L.	- -	6 13 38.36	158.16	73.83	25 31 52.7	229.5
	♎ Geminor.	3	6 13 26.05			22 35	
	♎ Geminor.	3	6 34 14.74			N. 25 17	
20	♎ Geminor.	3	6 13 26.04			N. 22 35	
	♎ Geminor.	3	6 34 14.73			25 17	
	Moon I. U.	8.5	6 45 14.57	157.70	73.72	24 33 0.1	-358.8
	Moon I. L.	- -	7 16 39.29	156.28	73.36	23 8 40.6	483.4
	♏ Geminor.	3.4	7 10 43.32			22 16	
	♏ Geminor.	2	7 35 40.97			N. 28 24	
21	♏ Geminor.	3.4	7 10 43.31			N. 22 16	
	♏ Geminor.	2	7 35 40.96			28 24	
	Moon I. U.	9.6	7 47 42.28	154.12	72.81	21 20 8.7	-600.3
	Moon I. L.	- -	8 18 16.36	151.51	72.13	19 9 15.0	-706.6
	♏ Cancri - -	5.6	8 22 37.41			18 37	
	♏ Cancri - -	4.5	8 35 44.57			N. 18 44	

MOON-CULMINATING STARS. 489

Date.	Name.	Mag- nitude.	At Greenwich Transit.					
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem- pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.	
1842.								
Mar. 22	θ Cancrī - -	5.6	h m s 8 22 37.40	"	"	N. 18 37		
	δ Cancrī - -	4.5	8 35 44.58			18 44		
	Moon I. v.	10.6	8 48 17.67	148.71	71.41	16 38 21.0	→ 800.0	
	Moon I. L.	- -	9 17 45.67	145.99	70.69	13 50 12.6	878.8	
	ξ Leonis - *	5	9 23 28.26			12 0		
	ο Leonis - *	4	9 32 45.63			N. 10 36		
23	ξ Leonis - *	5	9 23 28.26			N. 12 0		
	ο Leonis - *	4	9 32 45.62			10 36		
	Moon I. v.	11.6	9 46 42.56	143.56	70.03	10 47 53.9	→ 941.3	
	Moon I. L.	- -	10 15 12.86	141.58	69.49	7 34 43.2	987.4	
	α Leonis - *	1	10 0 0.01			12 44		
	ρ Leonis - *	4	10 24 32.11			N. 10 7		
24	α Leonis - *	1	10 0 0.00			N. 12 44		
	ρ Leonis - *	4	10 24 32.10			10 7		
	Moon I. v.	12.7	10 43 22.62	140.16	69.09	4 14 6.7	→ 1015.7	
	Moon I. L.	- -	11 11 19.04	139.35	68.85	0 49 36.4	1026.3	
	χ Leonis - *	4.5	10 56 54.63			N. 8 11		
	ε Leonis - -	4.5	11 22 17.41			S. 2 8		
25	χ Leonis - *	4.5	10 56 54.63			N. 8 11		
	ε Leonis - -	4.5	11 22 17.41			S. 2 8		
	Moon I. v.	13.7	11 39 9.62	139.19	68.78	2 35 13.2	→ 1019.0	
	Moon I. L.	- -	12 7 1.96	139.63	68.88	S. 5 56 50.6	994.3	
	γ Virginis -	3.4	12 11 52.24			N. 0 13		
26	γ Virginis -	3.4	12 11 52.24			N. 0 13		
	Moon II. v.	14.7	12 37 21.27	140.68	69.13	S. 9 11 48.1	→ 952.0	
	θ Virginis -	4.5	13 1 49.53			4 42		
	α Virginis -	1	13 16 55.50			S. 10 20		
27	θ Virginis -	4.5	13 1 49.54			S. 4 42		
	α Virginis -	1	13 16 55.51			10 20		
	Moon II. L.	- -	13 5 37.79	142.14	69.49	12 16 48.8	→ 894.9	
	Moon II. v.	15.8	13 34 13.67	143.88	69.93	15 8 46.3	822.3	
	λ Virginis -	4	14 10 37.23			S. 12 38		
28	λ Virginis -	4	14 10 37.25			S. 12 38		
	Moon II. L.	- -	14 3 11.40	145.74	70.41	17 44 52.0	→ 736.3	
	Moon II. v.	16.8	14 32 31.08	147.51	70.87	20 2 37.6	639.9	
	20 Libræ - -	3.4	14 54 53.43					
	ι ¹ Libræ - -	5.6	15 3 16.44					
29	20 Libræ - -	3.4	14 54 53.45					
	ι ¹ Libræ - -	5.6	15 3 16.46					
	Moon II. L.	- -	15 2 10.32	148.96	71.1		→ 533.4	
	Moon II. v.	17.9	15 32 3.95	149.88	71.1		→ 420	
	δ Scorpī - -	3	15 51 2.81					
	ε Scorpī - -	1	16 10 46.81					

90. MOON-CULMINATING STARS.

Date.	Name.	Mag- nitude.	At Greenwich Transit.					
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.	
			h m s	"	"	° ' "	"	
1842.								
Mar. 30	♏ Scorpii -	3	15 51 2 83			S. 22 10		
	♏ Scorpii -	1	16 19 46 51			26 5		
	Moon II. L.	- -	16 2 4 61	150 10	71 60	24 47 47 0	- 303 3	
	Moon II. v.	18 9	16 32 3 09	149 50	71 49	25 36 39 8	185 5	
	♈ Ophiuchi -	4.5	17 5 40 96			26 22		
	♁ Ophiuchi -	3.4	17 12 21 11			S. 24 50		
31	♈ Ophiuchi -	4.5	17 5 40 99			S. 26 22		
	♁ Ophiuchi -	3.4	17 12 21 15			24 50		
	Moon II. L.	- -	17 1 49 25	148 05	71 15	26 2 5 9	- 69 3	
	Moon II. v.	19 9	17 31 13 02	145 78	70 61	26 4 40 2	+ 42 7	
	♋ Sagittarii	5	17 50 11 10			23 48		
	♎ Sagittarii	4	18 18 15 43			S. 25 30		
April 1	♋ Sagittarii	5	17 50 11 14			S. 23 48		
	♎ Sagittarii	4	18 18 15 46			25 30		
	Moon II. L.	- -	18 0 5 29	142 32	69 38	25 45 24 1	+ 148 3	
	Moon II. v.	21 0	18 28 18 67	139 34	69 01	25 5 38 6	247 4	
	♌ Sagittarii	3	18 45 30 08			26 29		
	♏ Sagittarii	4.5	19 0 23 88			S. 21 16		
2	♌ Sagittarii	3	18 45 30 12			S. 26 29		
	♏ Sagittarii	4.5	19 0 23 92			21 16		
	Moon II. L.	- -	18 55 48 05	185 52	68 03	24 6 59 0	+ 337 7	
	Moon II. v.	22 0	19 22 30 65	131 57	67 00	22 51 7 6	419 3	
	♌ Sagittarii	5	19 33 30 41			16 29		
	♏ Sagittarii	5.6	19 49 21 00			S. 26 37		
3	♌ Sagittarii	5	19 33 30 44			S. 16 29		
	♏ Sagittarii	5.6	19 49 21 03			26 37		
	Moon II. L.	- -	19 48 25 99	127 67	65 96	21 19 49 8	+ 492 2	
	Moon II. v.	23 0	20 13 35 54	123 97	64 95	19 34 48 9	556 6	
	♐ Capricorni	5	20 31 4 51			18 41		
	♈ Aquarii -	4.5	20 39 8 48			S. 10 4		
4	♐ Capricorni	5	20 31 4 54			S. 18 41		
	♈ Aquarii -	4.5	20 39 8 50			10 4		
	Moon II. L.	- -	20 38 2 52	120 59	64 01	17 37 43 4	+ 613 0	
	Moon II. v.	24 1	21 1 51 40	117 63	63 17	15 30 7 0	661 8	
	♎ Capricorni	4	21 31 20 86			17 22		
	♏ Capricorni	3.4	21 38 19 73			S. 16 50		
5	♎ Capricorni	4	21 31 20 89			S. 17 22		
	♏ Capricorni	3.4	21 38 19 76			16 50		
	Moon II. L.	- -	21 25 7 57	115 15	62 46	13 13 27 5	+ 703 6	
	Moon II. v.	25 1	21 47 57 06	113 19	61 88	10 49 7 2	738 7	
	♁ Aquarii -	4.5	22 8 30 34			8 34		
	♋ Aquarii -	4	22 20 42 39			S. 0 50		
6	Moon II. L.	- -	22 10 26 36	111 79	61 44	S. 8 18 25 6	+ 767 2	

MOON-CULMINATING STARS. 49

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of (C's R. A. in 1 hour of Long.	Sidereal Time of (C's Sem. par. mer.	Declination.	Var. of (C's Dec. in 1 hour of Long.
1842. April 6	Moon II. v.	26.1	22 32 42.40	110.98	61.18	S. 5 42 38.9	+789.5
7	Moon II. L.	-	22 54 52.15	110.75	61.07	S. 3 3 3.1	+805.4
	Moon II. v.	27.2	23 17 2.84	111.13	61.14	S. 0 20 55.5	814.8
8	Moon II. L.	-	23 39 21.72	112.12	61.39	N. 2 22 24.2	+817.3
	Moon II. v.	28.2	0 1 56.11	113.71	61.81	5. 3 30.3	812.4
9	Moon II. L.	-	0 24 53.26	115.91	62.40	N. 7 46 51.2	+799.7
	Moon II. v.	29.2	0 48 20.31	118.70	63.15	10 24 48.4	778.3
10	Moon II. L.	-	1 12 24.15	122.04	64.05	N.12 57 32.0	+747.3
11	Moon I. v.	0.6	1 35 0.98	125.69	65.08	N.15 23 3.8	+706.2
	Moon I. L.	-	2 0 34.25	129.92	66.21	17 29 16.5	654.0
12	Moon I. v.	1.6	2 27 0.13	134.44	67.42	N.19 43 53.1	+590.1
	Moon I. L.	-	2 54 21.19	139.08	68.63	21 34 29.7	514.0
13	Moon I. v.	2.6	3 22 37.52	143.61	69.81	N.23 8 41.5	+425.9
	Moon I. L.	-	3 51 46.50	147.80	70.90	24 24 6.1	326.3
14	Moon I. v.	3.7	4 21 42.39	151.38	71.82	N.25 18 29.9	+216.5
	Moon I. L.	-	4 52 16.27	154.10	72.53	25 50 9.5	+ 98.3
15	♄ Tauri - -	4.5	4 53 40.43			N.21 22	
	♃ Tauri - -	5.6	5 9 47.55			21 56	
	Moon I. v.	4.7	5 23 16.74	155.78	72.97	25 57 32.3	- 25.3
	Moon I. L.	-	5 54 30.57	156.33	73.14	25 39 59.9	151.4
	♄ Tauri - -	4.5	5 43 25.30			27 34	
	♌ Geminor.	3	6 13 25.60			N.22 35	
16	♄ Tauri - -	4.5	5 43 25.28			N.27 34	
	♌ Geminor.	3	6 13 25.38			22 35	
	Moon I. v.	5.8	6 25 44.22	155.76	72.93	24 57 1.1	-276.7
	Moon I. L.	-	6 56 45.00	154.22	72.68	23 49 27.6	397.9
	♄ Geminor.	4	6 54 45.88			20 48	
	♌ Geminor.	3.4	7 10 42.86			N.22 16	
17	♄ Geminor.	4	6 54 45.86			N.20 48	
	♌ Geminor.	3.4	7 10 42.84			22 16	
	Moon I. v.	6.8	7 27 22.49	151.92	72.13	22 18 19.2	-512.1
	Moon I. L.	-	7 57 29.19	149.14	71.45	20 25 15.2	616.8
	♌ Geminor.	5	7 43 51.40			27 10	
	♄ Canceri - -	6	8 3 10.46			N.18 7	
18	♌ Geminor.	5	7 43 51.39			N.27 10	
	♄ Canceri - -	6	8 3 10.44			18 7	
	Moon I. v.	7.8	8 27 0.99	146.15	70.71	18 12 19.3	-710.3
	Moon I. L.	-	8 55 57.03	143.22	69.97	N.15 41 53.4	-791.7

92 MOON-CULMINATING STARS.

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842.			h m s	"	"	° ' "	"
Apr. 18	δ Cancri - -	4.5	8 35 44.16			N. 18 44	
	α ² Cancri - *	5	8 49 52.58			12 28	
19	δ Cancri - -	4.5	8 35 44.14			N. 18 44	
	α ² Cancri - *	5	8 49 52.56			12 28	
	Moon I. v.	8.9	9 24 19.33	140.56	69.28	12 56 31.6	-859.6
	Moon I. L.	- -	9 52 12.33	138.36	68.70	9 58 57.9	913.7
	τ Leonis - *	4.5	9 51 54.15			8 48	
	α Leonis - *	1	9 59 59.75			N. 12 44	
20	τ Leonis - *	4.5	9 51 54.14			N. 8 48	
	α Leonis - *	1	9 59 59.74			12 44	
	Moon I. v.	9.9	10 19 42.14	136.72	68.26	6 52 1.1	-953.4
	Moon I. L.	- -	10 46 56.18	135.73	67.97	3 38 35.8	978.4
	34 Sextantis *	6	10 34 28.98			4 25	
	d Leonis - *	5	10 52 26.67			N. 4 28	
21	34 Sextantis *	6	10 34 28.97			N. 4 25	
	d Leonis - *	5	10 52 26.67			4 28	
	Moon I. v.	10.9	11 14 2.47	135.43	67.86	N. 0 21 39.9	-988.4
	Moon I. L.	- -	11 41 9.35	135.83	67.93	S. 2 55 44.2	983.1
	ν Leonis - -	4.5	11 28 54.39			N. 0 3	
	β Virginis -	3.4	11 42 31.00			N. 2 39	
22	ν Leonis - -	4.5	11 28 54.38			N. 0 3	
	β Virginis -	3.4	11 42 30.99			N. 2 39	
	Moon I. v.	12.0	12 8 24.91	136.88	68.17	S. 6 10 32.4	-962.3
	Moon I. L.	- -	12 35 56.69	138.51	68.56	9 19 37.2	925.9
	q Virginis -	5.6	12 25 40.61			8 35	
	ψ Virginis -	5.6	12 46 11.71			S. 8 41	
23	q Virginis -	5.6	12 25 40.61			S. 8 35	
	ψ Virginis -	5.6	12 46 11.71			8 41	
	Moon I. v.	13.0	13 3 51.12	140.63	69.07	12 19 52.7	-874.1
	Moon I. L.	- -	13 32 13.12	143.08	69.67	15 8 15.3	807.2
	α Virginis -	1	13 16 55.72			10 20	
	α Virginis -	5.6	13 41 20.81			S. 17 21	
24	α Virginis -	1	13 16 55.72			S. 10 20	
	α Virginis -	5.6	13 41 20.81			17 21	
	Moon I. v.	14.1	14 1 5.43	145.65	70.30	17 41 50.2	-726.3
	α ² Libræ -	3	14 42 12.16			15 23	
	20 Libræ - -	3.4	14 54 53.93			S. 24 39	
25	α ² Libræ - -	3	14 42 12.17			S. 15 23	
	20 Libræ - -	3.4	14 54 53.96			24 39	
	Moon II. L.	- -	14 32 50.12	148.22	70.91	19 57 54.6	-632.5
	Moon II. v.	15.1	15 2 41.76	150.31	71.43	21 54 6.9	-527.9
	κ Libræ - -	5	15 32 54.60			S. 19 10	

Date.	Name.	Mag- nitude.	At Greenwich Transit.					
			Apparent Right Ascension in Time.	Var. of C's R.A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.	
1842.								
Apr. 25	♄ Scorpii -	3.4	h m s 15 49 21.82	"	"	S. 25 39 "	"	"
26	♋ Librae - -	5	15 32 54.62			S. 19 10		
	♄ Scorpii -	3.4	15 49 21.84			25 39		
	Moon II. L. - -	- -	15 32 55.00	151.77	71.80	23 28 31.0	-415.0	
	Moon II. U. -	16.1	16 3 21.04	152.41	71.98	24 39 44.4	296.6	
	♄ Scorpii -	4	16 11 39.17			25 12		
	♌ Scorpii -	1	16 19 47.25			S. 26 5		
27	♄ Scorpii -	4	16 11 39.19			S. 25 12		
	♌ Scorpii -	1	16 19 47.27			26 5		
	Moon II. L. - -	- -	16 33 48.90	152.05	71.92	25 27 1.3	-176.1	
	Moon II. U. -	17.2	17 4 6.26	150.67	71.61	25 50 16.0	- 56.8	
	ε ² Ophiuchi -	5	17 21 50.03			23 50		
	♄ Sagittarii	5	17 50 11.94			S. 23 48		
28	ε ² Ophiuchi -	5	17 21 50.06			S. 23 50		
	♄ Sagittarii	5	17 50 11.97			23 48		
	Moon II. L. - -	- -	17 34 1.02	148.30	71.06	25 50 0.2	+ 58.5	
	Moon II. U. -	18.2	18 3 22.21	145.11	70.29	25 27 18.4	167.2	
	λ Sagittarii	4	18 18 16.33			25 30		
	♄ Sagittarii	3	18 45 30.98			S. 26 29		
29	λ Sagittarii	4	18 18 16.36			S. 25 30		
	♄ Sagittarii	3	18 45 31.02			26 29		
	Moon II. L. - -	- -	18 32 1.10	141.29	69.36	24 43 40.9	+267.5	
	Moon II. U. -	19.2	18 59 51.59	137.09	68.32	23 40 54.8	358.5	
	ρ ¹ Sagittarii	5	19 12 33.19			18 8		
	h ² Sagittarii	4.5	19 27 8.06			S. 25 14		
30	ρ ¹ Sagittarii	5	19 12 33.22			S. 18 8		
	h ² Sagittarii	4.5	19 27 8.10			25 14		
	Moon II. L. - -	- -	19 26 50.54	132.74	67.22	22 20 56.4	+439.6	
	Moon II. U. -	20.3	19 52 57.50	128.46	66.11	20 45 43.2	511.0	
	β ² Capricorni	3.4	20 12 10.08			15 16		
	ν Capricorni	5	20 31 5.35			S. 18 41		
May 1	β ² Capricorni	3.4	20 12 10.12			S. 15 16		
	ν Capricorni	5	20 31 5.39			18 41		
	Moon II. L. - -	- -	20 18 14.42	124.42	65.04	18 57 9		
	Moon II. U. -	21.3	20 42 45.05	120.76	64.06	16 57		
	ν Aquarii -	5	21 1 1.02			12 0		
	ι Capricorni	5	21 13 28.51			S. 17 30		
2	ν Aquarii -	5	21 1 1.04			S. 12 0		
	ι Capricorni	5	21 13 28.55			17 30		
	Moon II. L. - -	- -	21 6 34.55	117.58	63.18	14 4		
	Moon II. U. -	22.3	21 29 49.11	114.95	62.44	12 2		
	μ Capricorni	5	21 44 42.21			14 1		
	30 Aquarii -	5.6	21 54 59.07			S. 7		

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of ☉'s R. A. in 1 hour of Long.	Sidereal Time of ☉'s Sem. pas. mer.	Declination.	Var. of ☉'s Dec. in 1 hour of Long.
1842.			h m s	"	"	° ' "	"
May 3	♃ Capricorn	5	21 44 42·24			S. 14 17	
	30 Aquarii -	5.6	21 54 59·10			7 17	
	Moon II. L. -	- -	21 52 35·63	112·91	61·86	10 3 19·7	+742·1
	Moon II. v. -	23·4	22 15 1·35	111·49	61·44	7 32 15·7	767·6
	♈ Aquarii -	4	22 27 15·64			0 56	
	λ Aquarii -	4	22 44 23·58			S. 8 25	
4	♈ Aquarii -	4	22 27 15·67			S. 0 56	
	λ Aquarii -	4	22 44 23·61			8 25	
	Moon II. L. -	- -	22 37 13·88	110·71	61·19	4 56 41·7	+787·1
	Moon II. v. -	24·4	22 59 21·06	110·59	61·18	S. 2 17 49·1	800·7
	♈ Piscium -	4.5	23 8 39·82			N. 2 25	
	λ Piscium -	5	23 24 0·54			N. 0 55	
5	♈ Piscium -	4.5	23 8 59·85			N. 2 25	
	λ Piscium -	5	23 34 0·56			0 55	
	Moon II. L. -	- -	23 21 30·74	111·13	61·25	0 23 10·5	+808·2
	Moon II. v. -	25·4	23 43 50·95	112·35	61·56	N. 3 3 2·9	809·4
6	Moon II. L. -	- -	0 6 29·72	114·23	62·05	N. 5 46 28·9	+803·7
	Moon II. v. -	26·5	0 29 35·06	116·77	62·72	8 26 0·4	790·2
7	Moon II. L. -	- -	0 53 14·79	119·96	63·56	N. 11 1 59·7	+768·2
	Moon II. v. -	27·5	1 17 36·44	123·75	64·56	13 32 38·0	736·5
8	Moon II. L. -	- -	1 42 46·83	128·07	65·68	N. 15 55 52·0	+694·0
	Moon II. v. -	28·5	2 8 51·71	132·81	66·92	18 9 26·1	639·6
9	Moon II. L. -	- -	2 35 55·26	137·81	68·19	N. 20 10 52·5	+572·5
	Moon II. v. -	0·0	3 3 59·33	142·86	69·47	21 57 34·6	492·2
10	Moon I. L. -	- -	3 30 41·48	147·48	70·68	N. 23 26 53·2	+398·7
11	Moon I. v. -	1·1	4 0 37·75	151·79	71·75	N. 24 36 14·1	+292·8
	Moon I. L. -	- -	4 31 21·02	155·26	72·61	25 23 17·7	176·2
12	Moon I. v. -	2·1	5 2 39·58	157·62	73·20	N. 25 46 12·4	+ 51·8
	Moon I. L. -	- -	5 34 18·95	158·71	73·49	25 43 43·6	- 77·0
13	Moon I. v. -	3·1	6 6 3·37	158·47	73·46	N. 25 15 21·7	-206·4
	Moon I. L. -	- -	6 37 37·36	157·00	73·13	24 21 24·9	332·2
14	ε Geminor.	3	6 34 13·94			N. 25 17	
	ζ Geminor.	4	6 54 45·54			20 48	
	Moon I. v. -	4·2	7 8 47·36	154·52	72·56	23 2 57·1	-451·0
	Moon I. L. -	- -	7 39 23·00	151·33	71·80	21 21 39·8	-560·0
	κ Geminor.	5	7 24 36·63			16 10	
	β Geminor.	2	7 35 40·09			N. 28 24	
15	κ Geminor.	5	7 24 36·62			N. 16 10	

MOON-CULMINATING STARS. 49!

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842. May 15	β Geminor.	2	^h 7 ^m 35 ^s 40 ^{.08}	"	"	N. 28 24	"
	Moon I. U.	5 ^{.2}	8 9 17 ^{.73}	147 ^{.76}	70 ^{.94}	19 19 44 ^{.8}	-657 ^{.0}
	Moon I. L.	-	8 38 28 ^{.86}	144 ^{.11}	70 ^{.05}	16 59 43 ^{.5}	740 ^{.9}
	δ Cancri -	4.5	8 35 43 ^{.78}			18 44	
	α^2 Cancri - *	5	8 49 52 ^{.21}			N. 12 28	
16	δ Cancri -	4.5	8 85 43 ^{.77}			N. 18 44	
	α^2 Cancri - *	5	8 49 52 ^{.20}			12 28	
	Moon I. U.	6 ^{.3}	9 6 57 ^{.22}	140 ^{.67}	69 ^{.19}	14 24 17 ^{.2}	-811 ^{.1}
	Moon I. L.	-	9 34 46 ^{.52}	137 ^{.64}	68 ^{.44}	11 36 11 ^{.9}	867 ^{.5}
	ξ Leonis - *	5	9 23 27 ^{.57}			12 0	
	σ Leonis - *	4	9 32 44 ^{.97}			N. 10 36	
17	ξ Leonis - *	5	9 23 27 ^{.56}			N. 12 0	
	σ Leonis - *	4	9 32 44 ^{.95}			10 36	
	Moon I. U.	7 ^{.3}	10 2 2 ^{.77}	135 ^{.18}	67 ^{.81}	8 38 13 ^{.0}	-910 ^{.1}
	Moon I. L.	-	10 28 53 ^{.43}	183 ^{.39}	67 ^{.35}	5 33 4 ^{.6}	939 ^{.1}
	ρ Leonis - *	4	10 24 31 ^{.57}			10 7	
	δ^4 Sextantis *	6	10 34 28 ^{.69}			N. 4 25	
18	ρ Leonis - *	4	10 24 31 ^{.56}			N. 10 7	
	δ^4 Sextantis *	6	10 34 28 ^{.68}			4 25	
	Moon I. U.	8 ^{.3}	10 55 26 ^{.95}	132 ^{.33}	67 ^{.06}	N. 2 23 28 ^{.0}	-954 ^{.8}
	Moon I. L.	-	11 21 52 ^{.28}	132 ^{.02}	66 ^{.97}	S. 0 47 57 ^{.5}	957 ^{.2}
	σ Leonis - *	4	11 13 1 ^{.88}			N. 6 54	
	ν Leonis - -	4.5	11 28 54 ^{.17}			N. 0 3	
19	σ Leonis - *	4	11 13 1 ^{.87}			N. 6 54	
	ν Leonis - -	4.5	11 28 54 ^{.17}			N. 0 3	
	Moon I. U.	9 ^{.4}	11 48 18 ^{.43}	132 ^{.46}	67 ^{.08}	S. 3 58 32 ^{.7}	-946 ^{.4}
	Moon I. L.	-	12 14 54 ^{.18}	133 ^{.61}	67 ^{.35}	S. 7 5 38 ^{.3}	922 ^{.3}
	η Virginis -	3.4	12 11 52 ^{.13}			N. 0 13	
	ζ Virginis -	5.6	12 25 40 ^{.50}			S. 8 35	
20	η Virginis -	3.4	12 11 52 ^{.12}			N. 0 13	
	ζ Virginis -	5.6	12 25 40 ^{.50}			S. 8 35	
	Moon I. U.	10 ^{.4}	12 41 47 ^{.63}	135 ^{.40}	67 ^{.79}	10 6 34 ^{.2}	-884 ^{.7}
	Moon I. L.	-	13 9 5 ^{.83}	137 ^{.72}	68 ^{.36}	12 58 38 ^{.0}	833 ^{.7}
	53 Virginis -	5	13 3 42 ^{.56}			15 21	
	α Virginis -	1	13 16 25 ^{.72}			S. 10 20	
21	53 Virginis -	5	13			S. 15 21	
	α Virginis -	1	13			10 20	
	Moon I. U.	11 ^{.4}	13	42	69 ^{.01}	15 39 8 ^{.4}	-769 ^{.1}
	Moon I. L.	-	13	0	69	25 ^{.5}	691 ^{.6}
	λ Virginis -	4	13				
22	λ Virginis -	4	13				
	Moon I. U.	12 ^{.5}	13		70 ^{.35}	13 ^{.1}	-601 ^{.8}
	Moon I. L.	-	13		70 ^{.91}	13 ^{.9}	-501 ^{.3}

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of ☾'s R. A. in 1 hour of Long.	Sidereal Time of ☾'s Sem. pas. mer.	Declination.	Var. of ☾'s Dec. in 1 hour of Long.
1842. May 22	20 Libræ - -	3.4	14 54 54.21	"	"	S. 24 39	"
	☾ Libræ - -	5.6	15 3 17.24			19 11	
23	20 Libræ - -	3.4	14 54 54.22			S. 24 39	
	☾ Libræ - -	5.6	15 3 17.24			19 11	
	Moon I. u.	13.5	15 33 39.48	150.63	71.45	23 34 54.4	-391.5
	Moon II. L.	- -	16 6 18.20	151.79	71.71	24 41 49.0	276.4
	β Scorpii - -	2	15 56 19.25			19 22	
	α Scorpii - -	1	16 19 47.75			S. 26 5	
24	β Scorpii - -	2	15 56 19.27			S. 19 22	
	α Scorpii - -	1	16 19 47.76			26 5	
	Moon II. u.	14.5	16 36 41.26	151.87	71.74	25 25 14.7	-157.7
	A Ophiuchi -	4.5	17 5 42.40			26 22	
	θ Ophiuchi -	3.4	17 12 22.56			S. 24 50	
25	A Ophiuchi -	4.5	17 5 42.37			S. 26 22	
	θ Ophiuchi -	3.4	17 12 22.58			24 50	
	Moon II. L.	- -	17 6 58.80	150.86	71.50	25 44 54.0	- 39.7
	Moon II. u.	15.6	17 36 57.77	148.79	71.01	25 41 8.1	+ 76.7
	μ Sagittarii	3.4	18 4 22.66			21 6	
	λ Sagittarii	4	18 18 17.09			S. 25 30	
26	μ Sagittarii	3.4	18 4 22.69			S. 21 6	
	λ Sagittarii	4	18 18 17.12			25 30	
	Moon II. L.	- -	18 6 26.12	145.79	70.29	25 14 53.8	+ 185.1
	Moon II. u.	16.6	18 35 13.82	142.06	69.38	24 27 38.4	285.1
	σ Sagittarii	3	18 45 31.83			26 29	
	τ Sagittarii	4.5	19 0 25.59			S. 21 16	
27	σ Sagittarii	3	18 45 31.85			S. 26 29	
	τ Sagittarii	4.5	19 0 25.62			21 16	
	Moon II. L.	- -	19 3 13.76	137.87	68.36	23 21 9.7	+ 377.1
	Moon II. u.	17.7	19 30 21.80	133.46	67.25	21 57 27.6	458.1
	57 Sagittarii	5.6	19 43 4.24			19 26	
	α Capricorni	3	20 9 20.11			S. 13 2	
28	57 Sagittarii	5.6	19 43 4.22			S. 19 26	
	α Capricorni	3	20 9 20.14			13 2	
	Moon II. L.	- -	19 56 36.73	129.06	66.13	20 18 35.9	+ 528.1
	Moon II. u.	18.7	20 22 0.02	124.87	65.05	18 26 36.6	589.1
	ν Capricorni	5	20 31 6.26			18 41	
	μ Aquarii - -	4.5	20 44 10.62			S. 9 34	
29	ν Capricorni	5	20 31 6.29			S. 18 41	
	μ Aquarii - -	4.5	20 44 10.65			9 34	
	Moon II. L.	- -	20 46 35.13	121.05	64.04	16.23 25.2	+ 640.5
	Moon II. u.	19.7	21 10 27.19	117.71	63.15	14 10 47.8	+ 683.5
	β Aquarii - -	3	21 23 16.93			6 16	
	λ Capricorni	3.4	21 22 21.40			12 22	

MOON-CULMINATING STARS. 497

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of ☉'s R. A. in 1 hour of Long.	Sidereal Time of ☉'s Sem. pas. mer.	Declination.	Var. of ☉'s Dec. in 1 hour of Long.
1842. May 30	β Aquarii -	3	h m s 21 23 16·96	"	"	S. 6° 16' "	"
	δ Capricorni	3.4	21 38 21·43			16 50	
	Moon II. L.	- -	21 33 42 35	114·92	62·40	11 50 21·2	+719·3
	Moon II. U.	20·7	21 56 27·64	112·74	61·80	9 23 33·0	747·7
	θ Aquarii -	4.5	22 8 31·92			8 34	
	ζ Aquarii -	4	22 20 43·93			S. 0 50	
31	θ Aquarii -	4.5	22 8 31·95			S. 8 34	
	ζ Aquarii -	4	22 20 43·96			0 50	
	Moon II. L.	- -	22 18 50·54	111·19	61·37	6 51 42·6	+769·7
	Moon II. U.	21·8	22 40 58·88	110·32	61·12	S. 4 16 3·4	785·9
	β Piscium -	5	22 55 52·34			N. 2 58	
	γ Piscium -	4.5	23 9 0·63			N. 2 25	
June 1	β Piscium -	5	22 55 52·37			N. 2 58	
	γ Piscium -	4.5	23 9 0·66			N. 2 25	
	Moon II. L.	- -	23 3 0·83	110·12	61·07	S. 1 37 45·0	+796·3
	Moon II. U.	22·8	23 25 4·39	110·62	61·20	N. 1 2 4·0	801·0
	λ Piscium -	5	23 34 1·34			0 55	
	ω Piscium *	4.5	23 51 13·76			N. 5 59	
2	λ Piscium -	5	23 34 1·37			N. 0 55	
	ω Piscium *	4.5	23 51 13·79			5 59	
	Moon II. L.	- -	23 47 18·59	111·83	61·52	3 42 13·9	+799·7
	Moon II. U.	23·8	0 9 51·38	113·75	62·04	6 21 31·0	792·0
	δ Piscium *	5	0 40 31·00			N. 6 43	
3	δ Piscium *	5	0 40 31·03			N. 6 43	
	Moon II. L.	- -	0 32 51·47	116·39	62·75	8 58 34·1	+777·2
	Moon II. U.	24·9	0 56 27·41	119·72	63·65	11 31 52·5	754·4
	η Piscium -	4	1 23 3·72			N. 14 32	
4	Moon II. L.	- -	1 20 47·41	123·72	64·70	N. 13 59 42·6	+722·3
	Moon II. U.	25·9	1 45 59·18	128·33	65·90	16 20 6·9	679·8
5	Moon II. L.	- -	2 12 9·37	133·44	67·21	N. 18 30 51·8	+625·6
	Moon II. U.	26·9	2 39 23·10	138·89	68·59	20 29 28·3	558·3
6	Moon II. L.	- -	3 7 43·00	144·43	69·97	N. 22 13 14·9	+477·1
	Moon II. U.	28·0	3 37 8·57	149·77	71·28	23 39 22·4	381·8
7	Moon II. L.	- -	4 7 35·34	154·57	72·44	N. 24 41	
	Moon II. U.	29·0	4 38 54·51	158·44	73·37	25 2	
8	Moon I. L.	- -	5 8 25·07	161·01	74·01	N. 25 4	
9	Moon I. U.	0·6	5 40 46·23	162·25	74·30		
	Moon I. L.	- -	6 13 13·24	161·99	74·2		
10	Moon I. U.	1·6	6 45 28·50	160·33	73·81		

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842. June 10	Moon I. L.	- -	^h 7 ^m 17 ^s 16.48	157.50	73.19	N. 22° 30' 10" 2	-499.4
11	Moon I. U.	2.7	7 48 25.33	153.87	72.33	N. 20 39 4.1	-609.4
	Moon I. L.	- -	8 18 47.72	149.82	71.36	18 27 22.4	705.4
12	Moon I. U.	3.7	8 48 20.68	145.69	70.35	N. 15 58 5.6	-785.4
	Moon I. L.	- -	9 17 5.15	141.78	69.40	13 14 22.2	849.4
13	ξ Leonis - *	5	9 23 27.31			N. 12 0	
	ο Leonis - *	4	9 32 44.69			10 36	
	Moon I. U.	4.8	9 45 5.27	138.33	68.54	10 19 23.5	-897.4
	Moon I. L.	- -	10 12 27.56	135.49	67.83	7 16 14.6	931.4
	α Leonis - *	1	9 59 59.13			12 44	
	ρ Leonis - *	4	10 24 31.29			N. 10 7	
14	α Leonis - *	1	9 59 59.12			N. 12 44	
	ρ Leonis - *	4	10 24 31.28			10 7	
	Moon I. U.	5.8	10 39 19.95	133.37	67.29	4 7 52.9	-950.4
	Moon I. L.	- -	11 5 51.39	132.01	66.95	0 57 6.7	955.4
	χ Leonis - *	4.5	10 56 53.91			8 11	
	τ Leonis - *	4	11 19 51.02			N. 3 44	
15	χ Leonis - *	4.5	10 56 53.90			N. 8 11	
	τ Leonis - *	4	11 19 51.01			N. 3 44	
	Moon I. U.	6.8	11 32 11.18	131.43	66.81	S. 2 13 24.1	-947.4
	Moon I. L.	- -	11 58 28.64	131.61	66.86	S. 5 21 6.1	927.4
	β Virginis -	3.4	11 42 30.56			N. 2 39	
	η Virginis -	3.4	12 11 51.90			N. 0 13	
16	β Virginis -	3.4	11 42 30.52			N. 2 39	
	η Virginis -	3.4	12 11 51.89			N. 0 13	
	Moon I. U.	7.9	12 24 52.69	132.52	67.10	S. 8 23 30.9	-894.4
	Moon I. L.	- -	12 51 31.59	134.07	67.49	11 18 13.8	850.4
	ψ Virginis -	5.6	12 46 11.46			8 41	
	θ Virginis -	4.5	13 1 49.49			S. 4 42	
17	ψ Virginis -	5.6	12 46 11.45			S. 8 41	
	θ Virginis -	4.5	13 1 49.48			4 42	
	Moon I. U.	8.9	13 18 32.44	136.15	68.01	14 2 52.1	-794.4
	Moon I. L.	- -	13 46 0.80	138.63	68.63	16 35 5.1	726.4
	α Virginis -	5.6	13 41 20.77			S. 17 21	
18	α Virginis -	5.6	13 41 20.76			S. 17 21	
	Moon I. U.	9.9	14 14 0.38	141.32	69.28	18 52 36.8	-647.4
	Moon I. L.	- -	14 42 32.35	143.99	69.92	20 53 16.6	-557.4
	α ³ Libræ -	3	14 42 12.40			15 23	
	20 Libræ -	3.4	14 54 54.21			S. 24 39	
19	α ³ Libræ -	3	14 42 12.40			S. 15 23	
	20 Libræ -	3.4	14 54 54.21			S. 24 39	

MOON-CULMINATING STARS. 499

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842.			h m s			° ′ ″	
June 19	Moon I. v.	11.0	15 11 35.18	146.41	70.49	S. 22 35 5.2	-458.9
	Moon I. L.	- -	15 41 4.18	148.31	70.92	23 56 19.9	352.4
	b Scorpii -	5	15 41 33.27			25 16	
	δ Scorpii -	3	15 51 4.04			S. 22 10	
20	b Scorpii -	5	15 41 33.27			S. 25 16	
	δ Scorpii -	3	15 51 4.04			22 10	
	Moon I. v.	12.0	16 10 51.79	149.47	71.17	24 55 40.9	-240.4
	Moon I. L.	- -	16 40 47.92	149.71	71.20	25 32 17.9	125.5
	α Scorpii -	1	16 19 48.02			26 5	
	γ Ophiuchi -	2.3	17 1 23.34			S. 15 31	
21	α Scorpii -	1	16 19 48.02			S. 26 5	
	γ Ophiuchi -	2.3	17 1 23.35			15 31	
	Moon I. v.	13.0	17 10 40.93	148.94	70.97	25 45 53.4	- 10.7
	Moon I. L.	- -	17 40 18.55	147.16	70.52	25 36 45.9	+101.2
	3 Sagittarii	5	17 37 41.50			27 46	
	4 Sagittarii	5	17 50 13.14			S. 23 48	
22	3 Sagittarii	5	17 37 41.51			S. 27 46	
	4 Sagittarii	5	17 50 13.15			23 48	
	Moon II. v.	14.1	18 11 48.91	144.35	69.84	25 5 45.9	+207.6
	φ Sagittarii	4.5	18 35 51.52			27 9	
	σ Sagittarii	3	18 45 32.44			S. 26 29	
23	φ Sagittarii	4.5	18 35 51.54			S. 27 9	
	σ Sagittarii	3	18 45 32.46			26 29	
	Moon II. L.	- -	18 40 21.06	140.91	68.97	24 14 13.3	+306.4
	Moon II. v.	15.1	19 8 8.88	136.99	68.00	23 3 49.0	396.0
	h ^s Sagittarii	4.5	19 27 9.64			25 14	
	57 Sagittarii	5.6	19 43 4.89			S. 19 26	
24	h ^s Sagittarii	4.5	19 27 9.67			S. 25 14	
	57 Sagittarii	5.6	19 43 4.91			19 26	
	Moon II. L.	- -	19 35 7.74	132.81	66.93	21 36 28.9	+475.6
	Moon II. v.	16.1	20 1 16.10	128.60	65.86	19 54 14.0	545.1
	β ^s Capricorni	3.4	20 12 11.68			15 16	
	v Capricorni	5	20 31 7.03			S. 18 41	
25	β ^s Capricorni	3.4	20 12 11.71			S. 15 16	
	v Capricorni	5	20 31 7.05			18 41	
	Moon II. L.	- -	20 26 34.68	124.55	64.81	17 59 6.0	+604.6
	Moon II. v.	17.2	20 51 6.47	120.81	63.84	15 53 2.4	654.5
	s Capricorni	5	21 7 3.64			15 49	
	β Aquarii -	3	21 23 17.72			S. 6 16	
26	s Capricorni	5	21 7 3.66			S. 15 49	
	β Aquarii -	3	21 23 17.75			6 16	
	Moon II. L.	- -	21 14 55.83	117.50	62.97	13 37 5.	

Date.	Name.	Mag- nitude.	At Greenwich Transit.					Declination.	Var. of C's Dec in 1 hour of Long.
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.				
1842.									
June 26	30 Aquarii -	5.6	h m s				S. 7 17 "		
	θ Aquarii -	4.5	21 55 0.77				8 34		
			22 8 32.76						
27	30 Aquarii -	5.6	21 55 0.80				S. 7 17		
	θ Aquarii -	4.5	22 8 32.79				8 34		
	Moon II. L. -	-	22 0 51.21	112.49	61.64		8 46 51.9	+754.7	
	Moon II. U. -	19.2	22 23 10.84	110.88	61.22		6 13 56.0	773.7	
	λ Aquarii -	4	22 44 25.29				S. 8 25		
	β Piscium -	5	22 55 53.19				N. 2 58		
28	λ Aquarii -	4	22 44 25.32				S. 8 25		
	β Piscium -	5	22 55 53.22				N. 2 58		
	Moon II. L. -	-	22 45 15.00	109.92	60.96		S. 3 37 48.8	+786.6	
	Moon II. U. -	20.3	23 7 11.56	109.61	60.90		S. 0 59 41.8	793.6	
	κ ¹ Piscium -	5.6	23 18 52.96				N. 0 24		
	ι Piscium *	4.5	23 31 52.16				N. 4 46		
29	κ ¹ Piscium -	5.6	23 18 52.99				N. 0 24		
	ι Piscium *	4.5	23 31 52.19				4 46		
	Moon II. L. -	-	23 29 8.48	109.99	61.02		1 39 15.0	+794.9	
	Moon II. U. -	21.3	23 51 14.12	111.05	61.33		4 17 53.0	790.4	
	d Piscium *	5.6	0 12 30.98				N. 7 19		
30	d Piscium *	5.6	0 12 31.01				N. 7 19		
	Moon II. L. -	-	0 13 36.78	112.83	61.84		6 55 0.0	+779.7	
	Moon II. U. -	22.3	0 36 24.95	115.32	62.53		9 29 19.9	762.4	
	ε Piscium *	4	0 54 47.42				N. 7 2		
July 1	ε Piscium *	4	0 54 47.45				N. 7 2		
	Moon II. L. -	-	0 59 47.23	118.52	63.41		11 59 28.5	+737.7	
	Moon II. U. -	23.4	1 23 52.07	122.40	64.46		14 23 51.1	704.5	
	β Arietis -	3	1 45 57.60				N.20 2		
2	β Arietis -	3	1 45 57.63				N.20 2		
	Moon II. L. -	-	1 48 47.42	126.93	65.66		16 40 38.7	+661.7	
	Moon II. U. -	24.4	2 14 40.55	132.01	66.98		18 47 48.2	608.0	
	ν Arietis -	5.6	2 29 53.07				21 16		
	ε Arietis -	5	2 50 13.32				N.20 42		
3	ν Arietis -	5.6	2 29 53.11				N.21 16		
	ε Arietis -	5	2 50 13.35				20 42		
	Moon II. L. -	-	2 41 37.32	137.51	68.39		20 43 1.0	+542.0	
	Moon II. U. -	25.4	3 9 41.56	143.22	69.82		22 23 43.2	462.7	
	η Tauri -	3	3 38 8.11				23 37		
	A ¹ Tauri -	5	3 55 23.48				N.21 39		
4	Moon II. L. -	-	3 38 54.16	148.85	71.21		N.23 47 10.8	+369.5	
	Moon II. U. -	26.5	4 9 12.20	154.06	72.47		24 50 35.9	262.4	
5	Moon II. L. -	-	4 40 28.58	158.50	73.52		N.25 31 18.4	+142.7	

MOON-CULMINATING STARS. 501

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842. July 5	Moon II. u.	27.5	^h 5 ^m 12 ^s 31.61	161.78	74.29	N. 25 46 59.6	+ 12.7
6	Moon II. L.	- -	5 45 5.84	163.66	74.72	N. 25 35 57.3	- 123.8
	Moon II. u.	28.5	6 17 53.48	164.01	74.80	24 57 19.8	262.4
7	Moon II. L.	- -	6 50 36.15	162.87	74.52	N. 23 51 13.0	- 397.8
8	Moon I. u.	0.2	7 20 29.37	160.58	73.95	N. 22 18 43.4	- 525.3
	Moon I. L.	- -	7 52 17.16	157.26	73.15	20 21 52.4	640.8
9	Moon I. u.	1.3	8 23 21.42	153.38	72.21	N. 18 3 24.1	- 741.1
	Moon I. L.	- -	8 53 37.56	149.31	71.23	15 26 33.2	824.3
10	Moon I. u.	2.3	9 23 5.30	145.36	70.26	N. 12 34 51.3	- 889.5
	Moon I. L.	- -	9 51 47.76	141.80	69.39	9 31 55.8	936.7
11	Moon I. u.	3.3	10 19 50.80	138.81	68.65	N. 6 21 19.2	- 966.5
	Moon I. L.	- -	10 47 21.84	136.49	68.09	3 6 25.5	979.8
12	34 Sextantis *	6	10 34 28.21			N. 4 25	
	d Leonis - *	5	10 52 25.90			N. 4 28	
	Moon I. u.	4.4	11 14 29.51	134.91	67.70	S. 0 9 33.9	- 977.6
	Moon I. L.	- -	11 41 22.75	134.09	67.51	S. 3 23 39.0	961.0
	v Leonis - -	4.5	11 28 53.67			N. 0 3	
	β Virginis -	3.4	11 42 30.32			N. 2 39	
13	v Leonis - -	4.5	11 28 53.67			N. 0 3	
	β Virginis -	3.4	11 42 30.31			N. 2 39	
	Moon I. u.	5.4	12 8 10.56	134.00	67.50	S. 6 33 4.2	- 931.1
	Moon I. L.	- -	12 35 1.40	134.59	67.67	9 35 14.4	888.6
	γ Virginis -	5.6	12 25 40.03			8 35	
	ψ Virginis -	5.6	12 46 11.20			S. 8 41	
14	γ Virginis -	5.6	12 25 40.01			S. 8 35	
	ψ Virginis -	5.6	12 46 11.19			8 41	
	Moon I. u.	6.4	13 2 3.04	135.78	67.98	12 27 44.3	- 834.5
	Moon I. L.	- -	13 29 21.95	137.45	68.42	15 8 17.3	769.3
	α Virginis -	1	13 16 55.33			10 20	
	x Virginis -	5.6	13 41 20.52			S. 17 21	
15	α Virginis -	1	13 16 55.32			S. 10 20	
	x Virginis -	5.6	13 41 20.51			17 21	
	Moon I. u.	7.5	13 57 3.14	139.46	68.92	17 34 44.8	-
	Moon I. L.	- -	14 25 9.55	141.62	69.46	19 45 6.5	
	λ Virginis -	4	14 10 37.46			12 38	
	α ² Libræ - -	3	14 42 12.22			S. 15 23	
16	λ Virginis -	4	14 10 37.44			S. 12 38	
	α ² Libræ - -	3	14 42 12.22			15 23	
	Moon I. u.	8.5	14 53 41.86	143.74	69.97	S. 21 37 33.2	

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842. July 16	Moon I. L.	- -	h m s 15 22 38.19	145.57	70.40	S. 23 10 28.6	-413.5
	κ Libræ - -	5	15 32 54.99			19 10	
	δ Scorpii -	5	15 41 33.17			S. 25 16	
17	κ Libræ - -	5	15 32 54.98			S. 19 10	
	δ Scorpii -	5	15 41 33.17			25 16	
	Moon I. U.	9.6	15 51 53.71	146.92	70.70	24 22 34.2	-306.6
	Moon I. L.	- -	16 21 21.59	147.59	70.89	25 12 53.0	196.1
	σ Scorpii -	4	16 11 39.84			25 12	
18	α Scorpii -	1	16 19 47.98			S. 26 5	
	σ Scorpii -	4	16 11 39.83			S. 25 12	
	α Scorpii -	1	16 19 47.98			26 5	
	Moon I. U.	10.6	16 50 52.57	147.43	70.74	25 40 54.7	-84.2
	Moon I. L.	- -	17 20 16.47	146.40	70.44	25 46 37.0	+26.7
19	θ Ophiuchi -	3.4	17 12 23.04			24 50	
	ϵ^2 Ophiuchi -	5	17 21 51.20			S. 24 50	
	Moon I. U.	11.6	17 49 22.73	144.50	69.92	23 50	
	Moon I. L.	- -	18 18 1.56	141.85	69.82	25 30 26.5	+134.2
	μ^1 Sagittarii	3.4	18 4 23.38			24 53 19.1	236.0
20	ϕ Sagittarii	4.5	18 35 51.81			21 6	
	μ^1 Sagittarii	3.4	18 4 23.38			S. 27 9	
	ϕ Sagittarii	4.5	18 35 51.82			S. 21 6	
	Moon I. U.	12.7	18 46 4.70	138.59	68.37	27 9	
	Moon I. L.	- -	19 13 26.06	134.92	67.40	23 56 31.7	+330.5
21	π Sagittarii	4.5	19 0 26.57			22 41 40.8	416.4
	h^2 Sagittarii	4.5	19 27 10.06			21 16	
	Moon I. U.	13.7	19 40 1.98	131.05	66.88	S. 25 14	
	α^2 Capricorni	3	20 9 21.31			21 10 34.3	+493.0
	ρ Capricorni	5	20 19 55.06			13 2	
22	α^2 Capricorni	3	20 9 21.32			S. 18 20	
	ρ Capricorni	5	20 19 55.08			S. 13 2	
	Moon II. L.	- -	20 8 1.82	126.99	65.35	18 20	
	Moon II. U.	14.7	20 33 2.99	123.25	64.86	19 25 6.9	+560.0
	μ Aquarii -	4.5	20 44 11.93			17 27 12.8	617.4
23	s Capricorni	5	21 7 4.23			9 34	
	μ Aquarii -	4.5	20 44 11.94			S. 15 49	
	s Capricorni	5	21 7 4.25			S. 9 34	
	Moon II. L.	- -	20 57 21.00	119.81	63.44	15 49	
		15.8	21 20 59.89	116.75	62.63	15 18 46.0	+665.6
						S. 13 1 32.5	+705.2

MOON-CULMINATING STARS. 503

Date.	Name.	Mag- nitude.	At Greenwich Transit.					Declination.	Var. of C's Dec. in 1 hour of Long.
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.				
1842. July 23	λ Capricorni	5.6	h m s						
	30 Aquarii -	5.6	21 38 5.80			S. 12 5 "			
			21 55 1.43			7 17			
24	λ Capricorni	5.6	21 38 5.82			S. 12 5			
	30 Aquarii -	5.6	21 55 1.43			7 17			
	Moon II. L.	- -	21 44 4.85	114.16	61.93	10 37 13.8	+736.6		
	Moon II. U.	16.8	22 6 41.88	112.10	61.38	8 7 23.6	760.5		
	γ Aquarii -	4	22 13 33.43			2 11			
	η Aquarii -	4	22 27 18.04			S. 0 56			
25	γ Aquarii -	4	22 13 33.45			S. 2 11			
	η Aquarii -	4	22 27 18.06			0 56			
	Moon II. L.	- -	22 28 57.45	110.60	60.98	5 33 29.0	+777.5		
	Moon II. U.	17.8	22 50 58.54	109.68	60.76	S. 2 56 50.4	787.9		
	γ Piscium -	4.5	23 9 2.24			N. 2 25			
	α ¹ Piscium -	5.6	23 18 53.72			N. 0 24			
26	γ Piscium -	4.5	23 9 2.26			N. 2 25			
	α ¹ Piscium -	5.6	23 18 53.75			N. 0 24			
	Moon II. L.	- -	23 12 52.29	109.38	60.71	S. 0 18 44.4	+792.1		
	Moon II. U.	18.8	23 34 46.15	109.70	60.83	N. 2 19 35.2	790.2		
	ω Piscium *	4.5	23 51 15.43			5 59			
	B Piscium *	6	0 6 53.76			N. 7 57			
27	ω Piscium *	4.5	23 51 15.47			N. 5 59			
	B Piscium *	6	0 6 53.78			7 57			
	Moon II. L.	- -	23 56 47.70	110.67	61.13	4 56 56.2	+782.3		
	Moon II. U.	19.9	0 19 4.72	112.28	61.62	7 32 5.6	768.2		
	δ Piscium *	5	0 40 32.71			6 43			
	ε Piscium *	4	0 54 48.26			N. 7 2			
28	δ Piscium *	5	0 40 32.74			N. 6 43			
	ε Piscium *	4	0 54 48.29			7 2			
	Moon II. L.	- -	0 41 45.06	114.56	62.28	10 3 46.3	+747.5		
	Moon II. U.	20.9	1 4 56.68	117.49	63.11	12 30 35.9	719.6		
	η Piscium -	4	1 23 5.46			N. 14 32			
29	η Piscium -	4	1 23 5.50			N. 14 32			
	Moon II. L.	- -	1 28 47.32	121.06	64.09	14 51 4.6	+683.8		
	Moon II. U.	21.9	1 53 24.49	125.23	65.24	17 3 31.7	629.2		
	θ ¹ Arietis -	6	2 9 24.00			19 10			
	ν Arietis -	5.6	2 29 53.97			N. 21 16			
30	θ ¹ Arietis -	6	2 9 24.03			N. 19 10			
	ν Arietis -	5.6	2 29 54.01			21 16			
	Moon II. L.	- -	2 18 54.95	129.93	66.49	19 6			
	Moon II. U.	23.0	2 45 24.42	135.04	67.82	20 56.3			
	δ Arietis -	4	3 2 38.95			19 7			
	g Arietis -	5.6	3 15 2.85			N. 24 10			

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of ☉'s R.A. in 1 hour of Long.	Sidereal Time of ☉'s Sem. pas. mer.	Declination.	Var. of ☉'s Dec. in 1 hour of Long.
1842.			h m s	"	"	° ' "	"
July 31	δ Arietis - -	4	3 2 38 '98			N.19 7	
	g Arietis - -	5.6	3 15 2 '08			24 10	
	Moon II. L. - -	- -	3 12 56 '89	140 '39	69 '19	22 32 57 '6	+ 441 '7
	Moon II. v. - -	24 '0	3 41 33 '88	145 '75	70 '53	23 52 31 '8	351 '8
	A ¹ Tauri - -	5	3 55 24 '34			21 39	
	v ¹ Tauri - -	5	4 16 53 '87			N.22 27	
Aug. 1	A ¹ Tauri - -	5	3 55 24 '38			N.21 39	
	v ¹ Tauri - -	5	4 16 53 '90			22 27	
	Moon II. L. - -	- -	4 11 13 '88	150 '84	71 '78	24 52 50 '3	+ 249 '1
	Moon II. v. - -	25 '0	4 41 51 '68	155 '33	72 '85	25 31 23 '8	134 '5
	β Tauri - -	2	5 16 21 '01			28 28	
	ζ Tauri - -	3.4	5 28 14 '55			N.21 2	
2	Moon II. L. - -	- -	5 13 18 '12	158 '90	73 '70	N.25 45 58 '9	+ 9 '8
	Moon II. v. - -	26 '1	5 45 20 '67	161 '30	74 '26	25 34 48 '9	- 122 '4
3	Moon II. L. - -	- -	6 17 44 '10	162 '37	74 '49	N.24 56 46 '8	- 258 '2
	Moon II. v. - -	27 '1	6 50 12 '30	162 '10	74 '40	23 51 35 '6	393 '1
4	Moon II. L. - -	- -	7 22 29 '83	160 '63	74 '03	N.22 19 53 '0	- 522 '7
	Moon II. v. - -	28 '2	7 54 23 '70	158 '21	73 '43	20 23 10 '9	642 '3
5	Moon II. L. - -	- -	8 25 44 '29	155 '16	72 '68	N.18 3 51 '0	- 748 '5
	Moon II. v. - -	29 '2	8 56 26 '22	151 '81	71 '85	15 24 51 '8	838 '4
6	Moon I. L. - -	- -	9 24 5 '62	148 '61	71 '03	N.12 29 41 '5	- 910 '2
7	Moon I. v. - -	0 '9	9 53 30 '08	145 '53	70 '28	N. 9 22 3 '2	- 963 '0
	Moon I. L. - -	- -	10 22 20 '14	142 '90	69 '63	6 5 47 '1	996 '5
8	Moon I. v. - -	2 '0	10 50 42 '06	140 '86	69 '14	N. 2 44 41 '3	- 1011 '3
	Moon I. L. - -	- -	11 18 43 '24	139 '46	68 '82	S. 0 37 32 '9	1008 '2
9	Moon I. v. - -	3 '0	11 46 31 '64	138 '73	68 '66	S. 3 57 27 '2	- 988 '1
	Moon I. L. - -	- -	12 14 15 '22	138 '65	68 '67	S. 7 11 45 '4	952 '5
10	η Virginis - -	3.4	12 11 51 '42			N. 0 13	
	q Virginis - -	5.6	12 25 39 '77			S. 8 35	
	Moon I. v. - -	4 '0	12 42 1 '49	139 '16	68 '83	10 17 28 '9	- 902 '5
	Moon I. L. - -	- -	13 9 57 '01	140 '17	69 '11	13 11 52 '2	839 '4
	53 Virginis - -	5	13 3 41 '83			15 21	
	α Virginis - -	1	13 16 55 '04			S.10 20	
11	53 Virginis - -	5	13 3 41 '82			S.15 21	
	α Virginis - -	1	13 16 55 '03			10 20	
	Moon I. v. - -	5 '1	13 38 7 '02	141 '55	69 '49	15 52 27 '4	- 764 '6
	Moon I. L. - -	- -	14 6 35 '07	143 '15	69 '90	18 17 0 '7	- 679 '4
	Virginis - -	4	14 10 37 '14			S.12 38	

MOON-CULMINATING STARS. 50

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842.							
Aug. 12	λ Virginis -	4	h m s	"	"	° ' "	
	Moon I. u.	6.1	14 10 37.13			S. 12 38	
	Moon I. L.	-	14 35 22.60	144.76	70.31	20 23 36.3	
	20 Libræ - -	3.4	15 4 28.69	146.21	70.67	22 10 35.6	
	δ^1 Libræ - -	5.6	14 54 53.72			24 39	
			15 3 16.81			S. 19 11	
13	20 Libræ - -	3.4	14 54 53.71			S. 24 39	
	δ^1 Libræ - -	5.6	15 3 16.79			19 11	
	Moon I. u.	7.1	15 33 50.09	147.28	70.93	23 36 40.5	
	Moon I. L.	-	16 3 21.16	147.79	71.03	24 40 55.2	
	β^1 Scorpii -	2	15 56 19.07			19 22	
	α Scorpii -	1	16 19 47.70			S. 26 5	
14	β^1 Scorpii -	2	15 56 19.06			S. 19 22	
	α Scorpii -	1	16 19 47.69			26 5	
	Moon I. u.	8.2	16 32 54.38	147.62	70.96	25 22 48.9	
	Moon I. L.	-	17 2 20.90	146.67	70.70	25 42 17.9	
	η Ophiuchi -	2.3	17 1 23.18			15 31	
	θ Ophiuchi -	3.4	17 12 22.83			S. 24 50	
15	η Ophiuchi -	2.3	17 1 23.17			S. 15 31	
	θ Ophiuchi -	3.4	17 12 22.82			24 50	
	Moon I. u.	9.2	17 31 31.46	144.96	70.23	25 39 44.2	
	Moon I. L.	-	18 0 17.15	142.54	69.57	25 15 54.2	
	γ^2 Sagittarii	4	17 55 44.42			30 25	
	μ^1 Sagittarii	3.4	18 4 23.26			S. 21 6	
16	γ^2 Sagittarii	4	17 55 44.41			S. 30 25	
	μ^1 Sagittarii	3.4	18 4 23.25			21 6	
	Moon I. u.	10.3	18 28 30.07	139.53	68.77	24 31 56.6	
	Moon I. L.	-	18 56 4.30	136.11	67.86	23 29 17.4	
	σ Sagittarii	3	18 45 32.72			26 29	
	τ Sagittarii	4.5	19 0 26.56			S. 21 16	
17	σ Sagittarii	3	18 45 32.71			S. 26 29	
	τ Sagittarii	4.5	19 0 26.55			21 16	
	Moon I. u.	11.3	19 22 55.81	132.45	66.86	22 9 33.3	
	Moon I. L.	-	19 49 2.70	128.70	65.84	20 34 29.3	
	e^2 Sagittarii	5	19 33 33.24			16	
	57 Sagittarii	5.6	19 43 5.42			S. 1	
18	e^2 Sagittarii	5	19 33 33.24			S.	
	57 Sagittarii	5.6	19 43 5.41			S.	
	Moon I. u.	12.3	20 14 25.03	125.05	64.84	73.8	
	Moon I. L.	-	20 39 4.66	121.60	63.89	528.1	
	ν Capricorni	5	20 31 7.77				
	μ Aquarii -	4.5	20 44 12.14				
19	ν Capricorni	5	20 31 7.77				
	μ Aquarii -	4.5	20 44 12.14				

Date.	Name.	Mag- nitude.	At Greenwich Transit.					Declination.	Var. of C's De in 1 ho of Lon
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pat. mer.				
1842. Aug. 19	Moon I. v.	13.4	^h 21 ^m 3 ^s 4.79	118.48	63.02	S. 14 35 12.2	+673.4		
	Moon I. L.	-	21 26 29.71	115.75	62.26	12 16 32.4	711.1		
	♄ Capricorni	5	21 13 31.16			17 30			
	♈ Aquarii	3	21 23 18.64			S. 6 16			
20	♄ Capricorni	5	21 13 31.16			S. 17 30			
	♈ Aquarii	3	21 23 18.64			6 16			
	Moon I. v.	14.4	21 49 24.57	113.47	61.63	9 51 8.3	+741.3		
	♈ Aquarii	4.5	22 8 33.86			8 34			
	♈ Aquarii	4	22 20 45.90			S. 0 50			
21	♈ Aquarii	4.5	22 8 33.87			S. 8 34			
	♈ Aquarii	4	22 20 45.91			0 50			
	Moon II. L.	-	22 13 57.32	111.62	61.15	7 20 31.7	+763.7		
	Moon II. v.	15.4	22 36 8.90	110.40	60.81	4 46 8.2	779.1		
	♈ Aquarii	4	22 44 26.52			S. 8 25			
	♉ Piscium	5	22 55 54.44			N. 2 58			
22	♈ Aquarii	4	22 44 26.53			S. 8 25			
	♉ Piscium	5	22 55 54.45			N. 2 58			
	Moon II. L.	-	22 58 8.99	109.71	60.62	S. 2 9 20.1	+787.8		
	Moon II. v.	16.4	23 20 4.21	109.59	60.61	N. 0 28 32.8	790.0		
	♉ Piscium *	4.5	23 31 53.52			4 46			
	♉ Piscium *	4.5	23 51 16.05			N. 5 59			
23	♉ Piscium *	4.5	23 31 53.53			N. 4 46			
	♉ Piscium *	4.5	23 51 16.06			5 59			
	Moon II. L.	-	23 42 1.38	110.04	60.77	3 6 12.9	+785.7		
	Moon II. v.	17.5	0 4 7.39	111.06	61.09	5 42 23.1	774.9		
	♈ Piscium *	5.6	0 12 32.46			7 19			
	♈ Piscium *	5	0 40 33.40			N. 6 43			
24	♈ Piscium *	5.6	0 12 32.48			N. 7 19			
	♈ Piscium *	5	0 40 33.42			6 43			
	Moon II. L.	-	0 26 29.22	112.67	61.57	8 15 44.2	+757.5		
	Moon II. v.	18.5	0 49 13.85	114.86	62.22	10 44 55.1	733.1		
	♈ Piscium	4	1 23 6.22			N. 14 32			
25	♈ Piscium	4	1 23 6.25			N. 14 32			
	Moon II. L.	-	1 12 28.13	117.62	63.01	13 8 30.3	+701.5		
	Moon II. v.	19.5	1 36 18.77	120.91	63.94	15 24 58.7	661.9		
	♈ Arietis	3	1 45 59.33			20 2			
	♈ Arietis	6	2 9 24.82			N. 19 10			
26	♈ Arietis	3	1 45 59.35			N. 20 2			
	♈ Arietis	6	2 9 24.85			19 10			
	Moon II. L.	-	2 0 52.04	124.71	64.99	17 32 41.5	+613.8		
	Moon II. v.	20.6	2 26 13.48	128.93	66.15	19 29 51.8	+556.4		
	♈ Arietis	5	2 50 15.11			20 42			
	♈ Arietis	4	3 2 39.81			N. 19 7			

MOON-CULMINATING STARS. 50

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
Aug. 27	ε Arietis - -	5	2 50 15 '13			N. 20 42 "	
	δ Arietis - -	4	3 2 39 '84			19 7 "	
	Moon II. L. - -	- -	2 52 27 '51	133 '45	67 '34	21 14 34 '2	+ 489 "
	Moon II. v. - -	21 '6	3 19 36 '99	138 '14	68 '56	22 44 45 '9	411 "
	η Tauri - - -	3	3 38 9 '89			23 37 "	
	A' Tauri - - -	5	3 55 25 '88			N. 21 39 "	
	η Tauri - - -	3	3 38 9 '93			N. 23 37 "	
	A' Tauri - - -	5	3 55 25 '86			21 39 "	
	Moon II. L. - -	- -	3 47 42 '70	142 '79	69 '76	23 58 18 '9	+ 322 "
	Moon II. v. - -	22 '6	4 16 42 '84	147 '17	70 '85	24 53 4 '0	223 "
τ Tauri - - -	5	4 32 49 '51			22 39 "		
ι Tauri - - -	4.5	4 53 42 '67			N. 21 22 "		
29	τ Tauri - - -	5	4 32 49 '54			N. 22 39 "	
	ι Tauri - - -	4.5	4 53 42 '71			21 22 "	
	Moon II. L. - -	- -	4 46 32 '73	151 '04	71 '81	25 26 56 '7	+ 114 "
	Moon II. v. - -	23 '7	5 17 4 '89	154 '17	72 '57	25 38 5 '8	- 3 "
	C Tauri - - -	4.5	5 43 27 '14			27 34 "	
	γ Geminor. - -	4.5	6 5 23 '54			N. 22 33 "	
30	C Tauri - - -	4.5	5 43 27 '17			N. 27 34 "	
	η Geminor. - -	4.5	6 5 23 '57			22 33 "	
	Moon II. L. - -	- -	5 48 9 '08	156 '35	73 '08	25 25 1 '5	- 127 "
	Moon II. v. - -	24 '7	6 19 33 '28	157 '50	73 '34	24 46 46 '4	255 "
	ε Geminor. - -	3	6 34 15 '55			25 17 "	
	ζ Geminor. - -	4	6 54 46 '91			N. 20 48 "	
31	Moon II. L. - -	- -	6 51 4 '93	157 '60	73 '34	N. 23 42 59 '4	- 382 "
	Moon II. v. - -	25 '8	7 22 31 '93	156 '76	73 '10	23 14 2 '1	506 "
Sept. 1	Moon II. L. - -	- -	7 53 44 '10	155 '16	72 '68	N. 20 20 39 '9	- 622 "
	Moon II. v. - -	26 '8	8 24 33 '73	153 '05	72 '14	18 5 39 '5	728 "
2	Moon II. L. - -	- -	8 54 56 '42	150 '71	71 '53	N. 15. 30 24 '4	- 821 "
	Moon II. v. - -	27 '8	9 24 50 '73	148 '37	70 '93	12 38 9 '8	898 "
3	Moon II. L. - -	- -	9 54 18 '06	146 '24	70 '39	N. 9 32 13 '2	- 958 "
	Moon II. v. - -	28 '9	10 23 22 '13	144 '51	69 '95	6 16 10 '0	999 "
4	Moon II. L. - -	- -	10 52 8 '38	143 '29	69 '64	N. 2 53 46 '6	- 1021 "
5	Moon I. v. - -	0 '6	11 18 24 '29	142 '64	69 '48	S. 2 53 46 '6	- 1024 "
	Moon I. L. - -	- -	11 46 54 '77	142 '34	69 '48		1008 "
6	Moon I. v. - -	1 '6	12 15 27 '42	142 '99	69 '62		374 "
	Moon I. L. - -	- -	12 44 8 '54	143 '94	69 '52		23 "
7	Moon I. v. - -	2 '7	13 13 3 '37	145 '26	70 '00		56 "
	Moon I. L. - -	- -	13 42 15 '60	146 '80	70 '00		776 "

08 MOON-CULMINATING STARS.

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of ☉'s R. A. in 1 hour of Long.	Sidereal Time of ☉'s Sem. pas. mer.	Declination.	Var. of ☉'s Dec. in 1 hour of Long.
1842. Sept 8	Moon I. u.	3.7	^h 14 ^m 11 ^s 46.79	148.39	71.11	S. 18 31 15.6	-683.2
	Moon I. L.	-	14 41 36.29	149.81	71.49	20 37 45.9	580.4
9	α ² Libræ - -	3	14 42 11.52			S. 15 23	
	20 Libræ - -	3.4	14 54 53.31			24 39	
	Moon I. u.	4.7	15 11 40.84	150.86	71.78	22 22 56.2	-470.2
	Moon I. L.	-	15 41 54.80	151.35	71.91	23 45 30.4	354.9
	τ Scorpii -	3.4	15 49 21.59			25 39	
	β ¹ Scorpii -	2	15 56 18.66			S. 19 22	
10	τ Scorpii -	3.4	15 49 21.57			S. 25 39	
	β ¹ Scorpii -	2	15 56 18.63			19 22	
	Moon I. u.	5.8	16 12 10.40	151.12	71.87	24 44 45.7	-237.5
	Moon I. L.	-	16 42 18.44	150.08	71.61	25 20 30.9	120.4
	α Scorpii -	1	16 19 47.23			26 5	
	τ Scorpii -	3.4	16 26 6.98			S. 27 53	
11	α Scorpii -	1	16 19 47.23			S. 26 5	
	τ Scorpii -	3.4	16 26 6.96			27 53	
	Moon I. u.	6.8	17 12 9.19	148.24	71.14	25 33 6.2	- 6.2
	Moon I. L.	-	17 41 33.25	145.65	70.48	25 23 19.8	+102.9
	3 Sagittarii	5	17 37 41.04			27 46	
	4 Sagittarii	5	17 50 12.77			S. 23 48	
12	3 Sagittarii	5	17 37 41.03			S. 27 46	
	4 Sagittarii	5	17 50 12.76			23 48	
	Moon I. u.	7.9	18 10 22.39	142.45	69.66	24 52 23.8	+205.2
	Moon I. L.	-	18 38 30.30	138.81	68.70	24 1 47.0	299.5
	σ Sagittarii	3	18 45 32.38			26 29	
	ο Sagittarii	4.5	18 55 17.03			S. 21 58	
13	σ Sagittarii	3	18 45 32.36			S. 26 29	
	ο Sagittarii	4.5	18 55 17.01			21 58	
	Moon I. u.	8.9	19 5 52.74	134.91	67.66	22 53 10.6	+385.0
	Moon I. L.	-	19 32 27.78	130.93	66.59	21 28 21.9	461.5
	h ² Sagittarii	4.5	19 27 9.84			25 14	
	57 Sagittarii	5.6	19 43 5.18			S. 19 26	
14	h ² Sagittarii	4.5	19 27 9.82			S. 25 14	
	57 Sagittarii	5.6	19 43 5.17			19 26	
	Moon I. u.	9.9	19 58 15.48	127.05	65.53	19 49 9.7	+529.0
	Moon I. L.	-	20 23 17.75	123.38	64.52	17 57 20.4	587.7
	β ² Capricorni	3.4	20 12 12.14			15 16	
	v Capricorni	5	20 31 7.63			S. 18 41	
15	β ² Capricorni	3.4	20 12 12.13			S. 15 16	
	v Capricorni	5	20 31 7.62			18 41	
	Moon I. u.	11.0	20 47 38.00	120.05	63.57	15 54 37.6	+638.0
	Moon I. L.	-	21 11 20.60	117.12	62.74	S. 13 42 39.3	+680.4

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem- pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842.			h m s	"	"	° ' "	"
Sept. 15	<i>s</i> Capricorni	5	21 7 4.45			S. 15 49	
	<i>β</i> Aquarii -	3	21 23 18.62			6 16	
16	<i>s</i> Capricorni	5	21 7 4.45			S. 15 49	
	<i>β</i> Aquarii -	3	21 23 18.61			6 16	
	Moon I. u.	12.0	21 34 30.77	114.66	62.02	11 22 58.7	+715.2
	Moon I. l.	-	21 57 14.30	112.69	61.44	8 57 3.9	742.8
	<i>ε</i> Aquarii -	4.5	21 57 58.50			14 38	
	<i>θ</i> Aquarii -	4.5	22 8 33.94			S. 8 34	
17	<i>ε</i> Aquarii -	4.5	21 57 58.50			S. 14 38	
	<i>θ</i> Aquarii -	4.5	22 8 33.94			8 34	
	Moon I. u.	13.0	22 19 37.30	111.24	61.02	6 26 19.8	+763.5
	Moon I. l.	-	22 41 46.08	110.32	60.74	3 52 7.0	777.5
	<i>λ</i> Aquarii -	4	22 44 26.68			8 25	
	<i>χ</i> ² Piscium -	6	22 52 36.10			S. 0 40	
18	<i>λ</i> Aquarii -	4	22 44 26.68			S. 8 25	
	<i>χ</i> ² Piscium -	6	22 52 36.10			0 40	
	Moon I. u.	14.0	23 3 47.18	109.95	60.63	S. 1 15 46.3	+784.9
	Moon I. l.	-	23 25 47.08	110.13	60.68	N. 1 21 23.6	785.7
	<i>κ</i> ¹ Piscium -	5.6	23 18 54.52			0 24	
	<i>ι</i> Piscium *	4.5	23 31 53.80			N. 4 46	
19	<i>κ</i> ¹ Piscium -	5.6	23 18 54.52			N. 0 24	
	<i>ι</i> Piscium *	4.5	23 31 53.80			4 46	
	Moon II. u.	15.1	23 49 54.19	110.90	60.89	3 58 3.5	+779.8
	<i>d</i> Piscium *	5.6	0 12 32.84			N. 7 19	
20	<i>d</i> Piscium *	5.6	0 12 32.84			N. 7 19	
	Moon II. l.	-	0 12 12.17	112.19	61.25	6 32 51.9	+767.1
	Moon II. u.	16.1	0 34 48.83	114.01	61.78	9 4 24.9	747.2
	<i>ε</i> Piscium *	4	0 54 49.46			N. 7 2	
21	<i>ε</i> Piscium *	4	0 54 49.47			N. 7 2	
	Moon II. l.	-	0 57 50.53	116.35	62.45	11 31 13.9	+719.7
	Moon II. u.	17.1	1 21 23.21	119.18	63.25	13 51 46.6	684.4
	<i>β</i> Arietis -	3	1 45 59.93			N. 20 2	
22	<i>β</i> Arietis -	3	1 45 59.95			N. 20 2	
	Moon II. l.	-	1 45 32.49	118.18	64.16	16 4 25.8	+640.6
	Moon II. u.	18.2	2 10 23.14	120.18	65.18	18 7 26.3	588.0
	<i>ν</i> Arietis -	5.6	2 29 55.55			21 16	
	<i>ε</i> Arietis -	5	2 50 15.83			N. 20 42	
23	<i>ν</i> Arietis -	5.6	2 29 55.55			N. 21 6	
	<i>ε</i> Arietis -	5	2 50 15.83			21 16	
	Moon II. l.	-	2 35 37.77	122.18	66.24	19 11 13.9	+526.1
	Moon II. u.	19.2	3 2 27.91	124.18	67.33	14.1	+454.5

Date.	Name.	Mag- nitude.	At Greenwich Transit.					
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long	
1842.								
Sept. 23	g Arietis - -	5.6	^h 3 15 ^m 3 ^s 76	"	"	N. 24 10	"	"
	γ Tauri - -	3	3 38 10 71			23 37		
24	g Arietis - -	5.6	3 15 3 79			N. 24 10		
	γ Tauri - -	3	3 38 10 73			23 37		
	Moon II. L. - -	- -	3 29 35 86	138 08	68 41	23 0 11 3	+ 373 4	
	Moon II. U. - -	20 2	3 57 36 18	141 93	69 42	24 5 57 4	282 4	
	v ¹ Tauri - -	5	4 16 55 63			22 27		
	r Tauri - -	5	4 32 50 37			N. 22 39		
25	v ¹ Tauri - -	5	4 16 55 65			N. 22 27		
	r Tauri - -	5	4 32 50 40			22 39		
	Moon II. L. - -	- -	4 26 20 65	145 40	70 31	24 52 48 4	+ 183 4	
	Moon II. U. - -	21 3	4 55 43 43	148 29	71 05	25 18 49 5	+ 76 4	
	β Tauri - -	2	5 16 22 84			28 28		
	B Tauri - -	5	5 39 23 50			N. 24 30		
26	β Tauri - -	2	5 16 22 87			N. 28 28		
	B Tauri - -	5	5 39 23 53			24 30		
	Moon II. L. - -	- -	5 25 36 63	150 44	71 59	25 22 53 8	- 36 6	
	Moon II. U. - -	22 3	5 55 50 76	151 77	71 91	25 3 57 3	153 3	
	μ Geminor. - -	3	6 13 27 93			22 35		
	ε Geminor. - -	3	6 34 16 42			N. 25 17		
27	μ Geminor. - -	3	6 13 27 96			N. 22 35		
	ε Geminor. - -	3	6 34 16 44			25 17		
	Moon II. L. - -	- -	6 26 15 63	152 23	72 02	24 21 28 8	- 271 5	
	Moon II. U. - -	23 3	6 56 41 19	151 90	71 92	23 15 26 8	388 4	
	δ Geminor. - -	3.4	7 10 44 56			22 16		
	β Geminor. - -	2	7 35 41 92			N. 28 24		
28	δ Geminor. - -	3.4	7 10 44 59			N. 22 16		
	β Geminor. - -	2	7 35 41 95			28 24		
	Moon II. L. - -	- -	7 26 58 59	150 90	71 66	21 46 23 3	- 501 3	
	Moon II. U. - -	24 4	7 57 0 90	149 42	71 26	19 55 20 9	607 8	
	θ Cancrī - -	5.6	8 22 37 87			18 37		
	δ Cancrī - -	4.5	8 35 44 89			N. 18 44		
29	θ Cancrī - -	5.6	8 22 37 89			N. 18 37		
	δ Cancrī - -	4.5	8 35 44 92			18 44		
	Moon II. L. - -	- -	8 26 43 61	147 67	70 80	17 43 51 8	- 705 4	
	Moon II. U. - -	25 4	8 56 4 77	145 87	70 31	15 13 54 1	792 2	
	ξ Leonis - *	5	9 23 28 17			12 0		
	ο Leonis - *	4	9 32 45 47			N. 10 36		
30	Moon II. L. - -	- -	9 25 5 12	144 23	69 86	N. 12 27 48 7	- 866 4	
	Moon II. U. - -	26 5	9 53 47 41	142 89	69 49	9 28 17 3	926 4	
Oct. 1	Moon II. L. - -	- -	10 22 16 33	142 01	69 24	N. 6 18 17 8	- 970 8	
	Moon II. U. - -	27 5	10 50 37 77	141 66	69 12	N. 3 1 5 2	- 998 5	

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842.			h m s	s	s	° ' "	"
Oct. 2	Moon II. L.	- -	11 18 58.53	141.90	69.16	S. 0 19 55.7	-1008.6
	Moon II. U.	28.5	11 47 25.57	142.71	69.36	3 41 9.3	1000.5
3	Moon II. L.	- -	12 16 5.82	144.08	69.70	S. 6 58 54.1	- 973.9
	Moon I. U.	0.2	12 42 44.92	145.81	70.15	10 9 29.7	929.0
4	Moon I. L.	- -	13 12 7.20	147.95	70.71	S. 13 9 18.8	- 866.3
5	Moon I. U.	1.3	13 41 56.17	150.23	71.30	S. 15 54 55.1	- 787.1
	Moon I. L.	- -	14 12 12.36	152.43	71.88	18 23 10.3	693.1
6	Moon I. U.	2.3	14 42 53.28	154.31	72.37	S. 20 31 21.3	- 586.9
	Moon I. L.	- -	15 13 53.50	155.61	72.72	22 17 17.4	471.1
7	Moon I. U.	3.3	15 45 4.68	156.11	72.88	S. 23 39 24.1	- 349.3
	Moon I. L.	- -	16 16 16.31	155.65	72.80	24 36 49.9	224.9
8	β ¹ Scorpii	2	15 56 18.27			S. 19 22	
	α Scorpii	1	16 19 46.82			26 5	
	Moon I. U.	4.4	16 47 16.34	154.18	72.47	25 9 26.5	- 101.7
	Moon I. L.	- -	17 17 52.74	151.73	71.89	25 17 45.6	+ 17.5
	A Ophiuchi	4.5	17 5 41.69			26 22	
	θ Ophiuchi	3.4	17 12 21.93			S. 24 50	
9	A Ophiuchi	4.5	17 5 41.70			S. 26 22	
	θ Ophiuchi	3.4	17 12 21.91			24 50	
	Moon I. U.	5.4	17 47 54.51	148.44	71.10	25 2 52.2	+ 130.0
	Moon I. L.	- -	18 17 12.63	144.50	70.13	24 26 20.5	233.7
	μ ¹ Sagittarii	3.4	18 4 22.40			21 6	
	λ Sagittarii	4	18 18 16.94			S. 25 30	
10	μ ¹ Sagittarii	3.4	18 4 22.39			S. 21 6	
	λ Sagittarii	4	18 18 16.92			25 30	
	Moon I. U.	6.5	18 45 40.77	140.15	69.03	23 30 1.7	+ 327.7
	Moon I. L.	- -	19 13 15.45	135.62	67.86	22 15 56.4	411.4
	π Sagittarii	4.5	19 0 25.77			21 16	
	h ³ Sagittarii	4.5	19 27 9.38			S. 25 14	
11	π Sagittarii	4.5	19 0 25.76			S. 21 16	
	h ³ Sagittarii	4.5	19 27 9.36			25 14	
	Moon I. U.	7.5	19 39 55.80	131.13	66.69	20 46 8.2	+ 484.9
	Moon I. L.	- -	20 5 48.38	126.85	65.54	19 2 37.0	548.7
	β ³ Capricorni	3.4	20 12 11.75			15 16	
	ρ Capricorni	5	20 19 54.69			S. 18 2	
12	β ³ Capricorni	3.4	20 12 11.74			S. 15	
	ρ Capricorni	5	20 19 54.68			18	
	Moon I. U.	8.5	20 30 41.58	122.92	64.		
	Moon I. L.	- -	20 54 55.16	119.43	63		

12 MOON-CULMINATING STARS.

Date.	Name.	Mag- nitude.	At Greenwich Transit.					
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.	
1842.			h m s	° ' "				
Oct. 12	θ Capricorni	5.6	20 57 7.85			S. 17 51		
	σ Capricorni	5	21 7 4.14			15 49		
13	θ Capricorni	5.6	20 57 7.83			S. 17 51		
	σ Capricorni	5	21 7 4.13			15 49		
	Moon I. U.	9.6	21 18 29.88	116.45	62.66	12 48 1.8	+687.8	
	Moon I. L.	-	21 41 32.19	114.03	61.95	10 27 14.3	719.0	
	ξ Aquarii -	5	21 29 24.24			8 34		
	μ Capricorni	5	21 44 44.73			S. 14 17		
14	ξ Aquarii -	5	21 29 24.23			S. 8 34		
	μ Capricorni	5	21 44 44.73			14 17		
	Moon I. U.	10.6	22 4 8.84	112.18	61.40	8 0 52.7	+743.5	
	Moon I. L.	-	22 26 26.76	110.91	61.02	5 30 15.0	761.7	
	γ Aquarii -	4	22 13 33.74			2 11		
	η Aquarii -	4	22 27 18.45			S. 0 56		
15	γ Aquarii -	4	22 13 33.72			S. 2 11		
	η Aquarii -	4	22 27 18.44			0 56		
	Moon I. U.	11.6	22 48 33.09	110.24	60.79	2 56 37.2	+773.6	
	Moon I. L.	-	23 10 34.86	110.16	60.74	S. 0 21 13.0	779.4	
	γ Piscium -	4.5	23 9 2.97			N. 2 25		
	κ ¹ Piscium -	5.6	23 18 54.49			N. 0 24		
16	γ Piscium -	4.5	23 9 2.96			N. 2 25		
	κ ¹ Piscium -	5.6	23 18 54.48			0 24		
	Moon I. U.	12.6	23 32 39.13	110.65	60.86	2 14 42.9	+778.9	
	Moon I. L.	-	23 54 52.78	111.72	61.14	4 49 53.7	771.8	
	ω Piscium *	4.5	23 51 16.43			5 59		
	B Piscium *	6	0 6 54.86			N. 7 57		
17	ω Piscium *	4.5	23 51 16.43			N. 5 59		
	B Piscium *	6	0 6 54.85			7 57		
	Moon I. U.	13.7	0 17 22.67	113.36	61.57	7 22 58.5	+757.8	
	Moon I. L.	-	0 40 15.44	115.52	62.16	9 52 30.5	736.3	
	δ Piscium *	5	0 40 34.03			6 43		
	ε Piscium *	4	0 54 49.68			N. 7 2		
18	δ Piscium *	5	0 40 34.03			N. 6 43		
	ε Piscium *	4	0 54 49.68			7 2		
	Moon I. U.	14.7	1 3 37.26	118.20	62.90	12 16 57.5	+706.9	
	Moon I. L.	-	1 27 33.96	121.33	63.75	14 34 40.7	668.9	
	γ Piscium -	4	1 23 7.08			N. 14 32		
19	γ Piscium -	4	1 23 7.08			N. 14 32		
	Moon II. U.	15.7	1 54 19.99	125.00	64.70	16 43 53.7	+621.7	
	θ ¹ Arietis -	6	2 9 25.92			19 10		
	ν Arietis -	5.6	2 29 56.04			N. 21 16		
20	θ ¹ Arietis -	6	2 9 25.93			N. 19 10		

Date.	Name.	Mag- nitude.	At Greenwich Transit.					
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.	
1842.								
Oct. 20	γ Arietis - -	5.6	h m s				° ' "	
	Moon II. L. - -	- -	2 29 56.05				N.21 16	
	Moon II. U. - -	16.8	2 19 42.62	128.81	65.78		18 42 43.8	+564.9
	δ Arietis - -	4	2 45 51.97	132.76	66.78		20 29 12.1	498.2
	g Arietis - -	5.6	3 2 41.13				19 7	
			3 15 4.37				N.24 10	
21	δ Arietis - -	4	3 2 41.15				N.19 7	
	g Arietis - -	5.6	3 15 4.38				24 10	
	Moon II. L. - -	- -	3 12 48.82	136.70	67.83		22 1 20.1	+421.5
	Moon II. U. - -	17.8	3 40 31.90	140.44	68.81		23 17 9.5	335.1
	Α ¹ Tauri - -	5	3 55 26.76				21 39	
	υ ¹ Tauri - -	5	4 16 56.35				N.22 27	
22	Α ¹ Tauri - -	5	3 55 26.78				N.21 39	
	υ ¹ Tauri - -	5	4 16 56.38				22 27	
	Moon II. L. - -	- -	4 8 57.72	143.78	69.70		24 14 47.0	+239.7
	Moon II. U. - -	18.8	4 38 0.29	146.53	70.42		24 52 33.0	136.8
	ε Tauri - -	4.5	4 53 44.34				21 22	
	β Tauri - -	2	5 16 23.69				N.28 28	
23	ε Tauri - -	4.5	4 53 44.37				N.21 22	
	β Tauri - -	2	5 16 23.72				28 28	
	Moon II. L. - -	- -	5 7 31.46	148.53	70.95		25 9 7.3	+28.0
	Moon II. U. - -	19.9	5 37 21.58	149.68	71.27		25 3 31.1	-84.5
	H Geminor. - -	5	5 54 35.85				23 16	
	μ Geminor. - -	3	6 13 28.80				N.22 35	
24	H Geminor. - -	5	5 54 35.88				N.23 16	
	μ Geminor. - -	3	6 13 28.83				22 35	
	Moon II. L. - -	- -	6 7 20.26	149.95	71.36		24 35 15.2	-198.1
	Moon II. U. - -	20.9	6 37 17.16	149.40	71.24		23 44 20.7	310.5
	ζ Geminor. - -	4	6 54 48.62				20 48	
	δ Geminor. - -	3.4	7 10 45.43				N.22 16	
25	ζ Geminor. - -	4	6 54 48.65				N.20 48	
	δ Geminor. - -	3.4	7 10 45.46				22 16	
	Moon II. L. - -	- -	7 7 3.22	148.17	70.95		22 31 17.2	-419.2
	Moon II. U. - -	22.0	7 36 31.24	146.44	70.51		20 57 3.5	522.0
	μ ¹ Cancri - -	6	7 57 0.38				23 5	
	θ Cancri - -	5.6	8 22 38.69				N.18 37	
26	μ ¹ Cancri - -	6	7 57 0.41				N.23 5	
	θ Cancri - -	5.6	8 22 38.72				18 37	
	Moon II. L. - -	- -	8 5 36.53				19 3 1.0	-617.0
	Moon II. U. - -	23.0	8 34 17.03				16 50 51.7	-702.9
	α ² Cancri - *	5	8 49 53.93				12 28	
	q Cancri - -	6	9 10 12.77				N.18 22	
27	α ² Cancri - *	5	8 49 53.93				N.12 28	
	q Cancri - -	6	9 10 12.77				N.18 22	

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem- pas. mer.	Declination.	Var. of C's Dec in 1 hour of Long.
1842. Oct. 27	Moon II. L.	- -	9 2 33 '22	140 '40	68 '95	N. 14 22 32 '5	-778 '5
	Moon II. U.	24 '0	9 30 27 '83	138 '77	68 '50	11 40 13 '7	842 '7
	π Leonis - *	4.5	9 51 54 '82			8 48	
	α Leonis - *	1	10 0 0 '35			N. 12 44	
28	π Leonis - *	4.5	9 51 54 '85			N. 8 48	
	α Leonis - *	1	10 0 0 '38			12 44	
	Moon II. L.	- -	9 58 5 '62	137 '61	68 '17	8 46 16 '4	-894 '7
	Moon II. U.	25 '1	10 25 32 '68	137 '01	67 '97	5 43 18 '3	933 '7
	d Leonis - *	5	10 52 26 '78			N. 4 28	
φ Leonis - -	5	11 8 40 '55			S. 2 47		
29	Moon II. L.	- -	10 52 56 '30	137 '04	67 '94	N. 2 33 41 '8	-958 '7
	Moon II. U.	26 '1	11 20 24 '24	137 '74	68 '09	S. 0 39 23 '0	969 '7
30	Moon II. L.	- -	11 48 4 '64	139 '10	68 '40	S. 3 33 0 '8	-964 '7
	Moon II. U.	27 '1	12 16 5 '19	141 '09	68 '87	7 4 0 '7	942 '7
31	Moon II. L.	- -	12 44 32 '98	143 '62	69 '49	S. 10 9 2 '1	-904 '7
	Moon II. U.	28 '2	13 13 33 '52	146 '54	70 '19	13 4 41 '1	849 '7
Nov. 1	Moon II. L.	- -	13 43 10 '65	149 '66	70 '96	S. 15 47 32 '8	-776 '7
	Moon II. U.	29 '2	14 13 25 '13	152 '73	71 '72	18 14 17 '8	688 '7
2	Moon I. L.	- -	14 41 49 '98	155 '36	72 '39	S. 20 21 55 '1	-585 '7
3	Moon I. U.	0 '8	15 13 7 '68	157 '47	72 '92	S. 22 7 46 '8	-471 '7
	Moon I. L.	- -	15 44 45 '54	158 '66	73 '23	23 29 53 '5	348 '7
4	Moon I. U.	1 '9	16 16 31 '06	158 '72	73 '28	S. 24 26 56 '7	-221 '7
	Moon I. L.	- -	16 48 9 '98	157 '55	73 '08	24 58 28 '7	- 94 '7
5	Moon I. U.	2 '9	17 19 27 '54	155 '18	72 '49	S. 25 4 50 '9	+ 29 '7
	Moon I. L.	- -	17 '50 10 '13	151 '76	71 '69	24 47 7 '3	146 '7
6	4 Sagittarii	5	17 50 11 '93			S. 23 48	
	μ Sagittarii	3.4	18 4 22 '03			21 6	
	Moon I. U.	4 '0	18 20 6 '50	147 '53	70 '68	24 6 58 '9	+253 '7
	Moon I. L.	- -	18 49 8 '66	142 '77	69 '52	23 6 29 '6	349 '7
	σ Sagittarii	3	18 45 31 '45			26 29	
	τ Sagittarii	4.5	19 0 25 '36			S. 21 16	
7	σ Sagittarii	3	18 45 31 '44			S. 26 29	
	τ Sagittarii	4.5	19 0 25 '37			21 16	
	Moon I. U.	5 '0	19 17 12 '11	137 '79	68 '28	21 47 56 '0	+434 '7
	Moon I. L.	- -	19 44 15 '66	132 '83	67 '03	20 13 37 '9	+507 '7
	η Sagittarii	4.5	19 27 8 '92			25 14	
57 Sagittarii	5.6	19 43 4 '31			S. 19 26		
8	η Sagittarii	4.5	19 27 8 '91			S. 25 14	

MOON-CULMINATING STARS. 515

Date.	Name.	Mag- nitude.	At Greenwich Transit.					Var. of C's Dec. in 1 hour of Long.
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.		
1842. Nov. 8	57 Sagittarii	5.6	h m s	"	"	° ' "	"	
	Moon I. v.	6.0	19 43 4.30			S. 19 26		
	Moon I. L.	- -	20 10 20.93	128.11	65.81	18 25 51.0	+569.0	
	ρ Capricorni	5	20 35 31.89	123.79	64.67	16 26 41.1	621.0	
	ε Aquarii -	4.5	20 19 54.25			18 20		
			20 39 10.77			S. 10 4		
9	ρ Capricorni	5	20 19 54.23			S. 18 20		
	ε Aquarii -	4.5	20 39 10.76			10 4		
	Moon I. v.	7.1	20 59 53.90	119.98	63.65	14 18 8.5	+663.8	
	Moon I. L.	- -	21 23 33.59	116.74	62.76	12 1 41.4	698.6	
	ι Capricorni	5	21 13 30.39			17 30		
	β Aquarii -	3	21 23 17.96			S. 6 16		
10	ι Capricorni	5	21 13 30.38			S. 17 30		
	β Aquarii -	3	21 23 17.95			6 16		
	Moon I. v.	8.1	21 46 38.14	114.13	62.04	9 39 7.2	+726.0	
	Moon I. L.	- -	22 9 15.24	112.16	61.48	7 11 44.5	746.8	
	θ Aquarii -	4.5	22 8 33.41			8 34		
	ζ Aquarii -	4	22 20 45.53			S. 0 50		
11	θ Aquarii -	4.5	22 8 33.40			S. 8 34		
	ζ Aquarii -	4	22 20 45.52			0 50		
	Moon I. v.	9.1	22 31 32.62	110.84	61.09	4 40 48.4	+761.6	
	Moon I. L.	- -	22 53 38.11	110.18	60.89	2 7 30.2	770.5	
	λ Aquarii -	4	22 44 26.28			S. 8 25		
	β Piscium -	5	22 55 54.29			N. 2 58		
12	λ Aquarii -	4	22 44 26.27			S. 8 25		
	β Piscium -	5	22 55 54.28			N. 2 58		
	Moon I. v.	10.2	23 15 39.60	110.17	60.86	0 27 0.7	+773.7	
	Moon I. L.	- -	23 37 44.81	110.80	61.02	8 1 35.3	771.1	
	ι Piscium *	4.5	23 31 53.60			4 46		
	ω Piscium *	4.5	23 51 16.28			N. 5 59		
13	ι Piscium *	4.5	23 31 53.60			N. 4 46		
	ω Piscium *	4.5	23 51 16.27			5 59		
	Moon I. v.	11.2	0 0 1.43	112.07	61.35	5 35 2.4	+762.4	
	Moon I. L.	- -	0 22 36.96	113.95	61.84	8 6 6.2	747.1	
	d Piscium *	5.6	0 12 32.83			N. 7 19		
14	d Piscium *	5.6	0 12 32.82			N. 7 19		
	Moon I. v.	12.2	0 45 38.66	116.43	62.50	10 33 23.2	+724.5	
	Moon I. L.	- -	1 9 13.41	119.46	63.30	12 55 27	694.1	
	η Piscium -	4	1 23 7.14			N. 14 32		
15	η Piscium -	4	1 23 7.14			N. 14 32		
	Moon I. v.	13.2	1 33 27.56	122.98	64.22	15 14	654.8	
	Moon I. L.	- -	1 58 26.50	126.91	65.25	17	605.9	
	β Arietis -	3	1 46 0.44					
	θ ¹ Arietis -	6	2 9 26.12					

Date.	Name.	Mag- nitude.	At Greenwich Transit.					Declination.	Var. of ☾'s Dec. in 1 hour of Lon.
			Apparent Right Ascension in Time.	Var. of ☾'s R. A. in 1 hour of Long.	Sidereal Time of ☾'s Sem. pas. mer.				
			h m s	"	"	"	° ' "		
1842. Nov. 16	β Arietis - -	3	1 46 0	44			N.20 2		
	θ ¹ Arietis - -	6	2 9 26	12			19 10		
	Moon I. U.	14.3	2 24 14	40	131 12	66 34	19 12 6	+546	
	Moon I. L.	- -	2 50 53	74	135 45	67 45	20 54 40	2	
	ε Arietis - -	5	2 50 16	70			20 42		
	δ Arietis - -	4	3 2 41	48			N.19 7		
17	ε Arietis - -	5	2 50 16	71			N.20 42		
	δ Arietis - -	4	3 2 41	48			19 7		
	Moon I. U.	15.3	3 18 24	81	139 70	68 53	22 22 10	+396	
	Moon II. L.	- -	3 49 4	40	143 80	69 53	23 32 26	7	
	η Tauri - -	3	3 38 11	83			23 37		
	A ¹ Tauri - -	5	3 55 27	25			N.21 39		
18	η Tauri - -	3	3 38 11	84			N.23 37		
	A ¹ Tauri - -	5	3 55 27	26			21 39		
	Moon II. U.	16.3	4 18 10	88	147 16	70 39	24 23 31	+204	
	τ Tauri - -	5	4 32 51	73			22 39		
	ι Tauri - -	4.5	4 53 44	97			N.21 22		
19	τ Tauri - -	5	4 32 51	75			N.22 39		
	ι Tauri - -	4.5	4 53 44	99			21 22		
	Moon II. L.	- -	4 47 53	22	149 74	71 05	24 53 39	+ 96	
	Moon II. U.	17.4	5 18 0	96	151 37	71 48	25 1 33	7	
	C Tauri - -	4.5	5 43 29	72			27 34		
	η Geminor.	4.5	6 5 26	07			N.22 33		
20	C Tauri - -	4.5	5 43 29	75			N.27 34		
	η Geminor.	4.5	6 5 26	10			22 33		
	Moon II. L.	- -	5 48 22	03	151 96	71 66	24 46 27	1	
	Moon II. U.	18.4	6 18 43	98	151 53	71 59	24 8 8	4	
	ε Geminor.	3	6 34 18	17			25 17		
	ζ Geminor.	4	6 54 49	46			N.20 48		
21	ε Geminor.	3	6 34 18	20			N.25 17		
	ζ Geminor.	4	6 54 49	49			20 48		
	Moon II. L.	- -	6 48 55	09	150 18	71 30	23 7 2	1	
	Moon II. U.	19.5	7 18 45	56	148 13	70 82	21 44 7	9	
	β Geminor.	2	7 35 43	79			28 24		
	ζ Cancri - -	6	8 3 13	27			N.18 7		
22	β Geminor.	2	7 35 43	82			N.28 24		
	ζ Cancri - -	6	8 3 13	29			18 7		
	Moon II. L.	- -	7 48 8	25	145 60	70 22	20 0 53	9	
	Moon II. U.	20.5	8 16 58	98	142 85	69 54	17 59 10	3	
	δ Cancri - -	4.5	8 35 46	62			18 44		
	α ² Cancri - *	5	8 49 54	80			N.12 28		
23	δ Cancri - -	4.5	8 35 46	66			N.18 44		

MOON-CULMINATING STARS. 5

Date.	Name.	Mag- nitude.	At Greenwich Transit.					Var. of C's De in 1 ho of Lon
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.		
1842.			h m s			° ' "		
Nov. 23	α ² Cancri - *	5	8 49 54·83			N. 12 28		
	Moon II. L.	- -	8 45 16·74	140·14	68·87	15 41 3·0	-727	
	Moon II. U.	21·5	9 13 3·21	137·67	68·24	13 8 47·4	792	
	ο Leonis - *	4	9 32 47·07			10 36		
	τ Leonis - *	4.5	9 51 55·67			N. 8 48		
24	ο Leonis - *	4	9 32 47·10			N. 10 36		
	τ Leonis - *	4.5	9 51 55·70			8 48		
	Moon II. L.	- -	9 40 22·37	135·61	67·71	10 24 45·0	-845	
	Moon II. U.	22·6	10 7 20·06	134·11	67·31	7 31 20·6	886	
	ρ Leonis - *	4	10 24 33·08			10 7		
	34 Sextantis *	6	10 34 30·06			N. 4 25		
25	ρ Leonis - *	4	10 24 33·11			N. 10 7		
	34 Sextantis *	6	10 34 30·09			4 25		
	Moon II. L.	- -	10 34 3·53	133·25	67·07	4 31 0·7	-914	
	Moon II. U.	23·6	11 0 40·85	133·09	67·01	1 26 13·6	930	
	τ Leonis - -	4	11 19 52·17			3 44		
	υ Leonis - -	4.5	11 28 54·96			N. 0 3		
26	τ Leonis - -	4	11 19 52·20			N. 3 44		
	υ Leonis - -	4.5	11 28 54·99			N. 0 3		
	Moon II. L.	- -	11 27 20·61	133·66	67·12	S. 1 40 28·2	-934	
	Moon II. U.	24·6	11 54 11·58	134·96	67·43	S. 4 46 28·2	923	
	η Virginis -	3.4	12 11 52·50			N. 0 13		
	ζ Virginis -	5.6	12 25 40·79			S. 8 35		
27	Moon II. L.	- -	12 21 22·34	136·95	67·90	S. 7 49 3·6	-899	
	Moon II. U.	25·7	12 49 0·70	139·54	68·53	10 45 26·2	861	
28	Moon II. L.	- -	13 17 13·24	142·62	69·27	S. 13 32 40·9	-808	
	Moon II. U.	26·7	13 46 4·82	146·01	70·09	16 7 48·7	740	
29	Moon II. L.	- -	14 15 37·74	149·47	70·92	S. 18 27 52·0	-657	
	Moon II. U.	27·8	14 45 51·15	152·71	71·69	20 29 58·8	561	
30	Moon II. L.	- -	15 16 40·63	155·42	72·34	S. 22 11 34·8	-452	
	Moon II. U.	28·8	15 47 57·94	157·29	72·79	23 30 30·6	335	
Dec. 1	Moon II. L.	- -	16 19 31·31	158·06	72·98	S. 24 25 14·0	-211	
2	Moon I. U.	0·3	16 48 40·75	157·62	72·87	S. 24	85	
	Moon I. L.	- -	17 20 3·12	155·89	72·46		38	
3	Moon I. U.	1·4	17 50 57·55	152·99	71·77	S.	6	
	Moon I. L.	- -	18 21 11·00	149·11	70·85		5	
4	Moon I. U.	2·4	18 50 33·57	144·56	69			
	Moon I. L.	- -	19 18 58·87	139·62	68			

Date.	Name.	Mag- nitude.	At Greenwich Transit.				Declination.	Var. of C's Dec in 1 hour of Long.
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.			
1842. Dec. 5	Moon I. U.	3.4	19 46 24.16	134.60	67.30	S. 19 55 20.5	+524.7	
	Moon I. L.	-	20 12 49.95	129.74	66.06	18 4 1.4	586.7	
6	♑ Capricorni	3	20 9 20.19			S. 13 2		
	♑ Capricorni	5	20 19 53.95			18 20		
	Moon I. U.	4.5	20 38 19.20	125.21	64.90	16 1 20.3	+638.7	
	Moon I. L.	-	21 2 56.93	121.17	63.25	13 49 24.2	679.7	
	♒ Aquarii	5	21 1 2.39			12 0		
	♑ Capricorni	3	21 7 3.40			S. 15 49		
7	♒ Aquarii	5	21 1 2.38			S. 12 0		
	♑ Capricorni	5	21 7 3.39			15 49		
	Moon I. U.	5.5	21 26 49.45	117.69	62.93	11 30 6.4	+712.0	
	Moon I. L.	-	21 50 3.98	114.84	62.17	9 5 7.4	736.0	
	♑ Capricorni	3.4	21 38 22.28			16 50		
	♒ Aquarii	4.3	21 57 57.57			S. 14 38		
8	♑ Capricorni	3.4	21 38 22.27			S. 16 50		
	♒ Aquarii	4.5	21 57 57.57			14 38		
	Moon I. U.	6.5	22 12 48.20	112.64	61.58	6 35 56.3	+754.3	
	Moon I. L.	-	22 35 10.13	111.13	61.18	4 3 53.2	765.3	
	♒ Aquarii	4	22 27 17.81			0 56		
	♒ Aquarii	4	22 44 23.95			S. 8 25		
9	♒ Aquarii	4	22 27 17.80			S. 0 56		
	♒ Aquarii	4	22 44 23.94			8 25		
	Moon I. U.	7.6	22 57 17.91	110.29	60.95	S. 1 30 10.5	+770.8	
	Moon I. L.	-	23 19 19.68	110.12	60.91	N. 1 4 3.7	770.7	
	♓ Piscium	4.3	23 9 3.38			2 25		
	♓ Piscium	4.5	23 31 53.33			N. 4 46		
10	♓ Piscium	4.3	23 9 3.37			N. 2 25		
	♓ Piscium	4.5	23 31 53.33			4 46		
	Moon I. U.	8.6	23 41 23.58	110.64	61.06	3 37 43.4	+765.0	
	Moon I. L.	-	0 3 37.76	111.83	61.39	6 9 41.0	753.6	
	♓ Piscium	4.5	23 51 16.00			5 59		
	♓ Piscium	5.6	0 12 22.59			N. 7 19		
11	♓ Piscium	4.5	23 51 15.99			N. 5 59		
	♓ Piscium	5.6	0 12 22.58			7 19		
	Moon I. U.	9.6	0 26 10.19	113.68	61.90	8 38 46.6	+736.3	
	Moon I. L.	-	0 49 8.73	116.18	62.57	11 3 44.4	712.2	
	♓ Piscium	5	0 40 33.78			6 43		
	♓ Piscium	4	0 54 49.49			N. 7 2		
12	♓ Piscium	5	0 40 33.77			N. 6 43		
	♓ Piscium	4	0 54 49.48			7 2		
	Moon I. U.	10.6	1 12 40.96	119.29	63.41	13 23 9.7	+680.7	
	Moon I. L.	-	1 36 53.93	122.96	64.38	15 35 28.9	+641.0	
	♓ Piscium	4	1 23 7.01			N. 14 32		

MOON-CULMINATING STARS. 519

Date.	Name.	Mag- nitude.	At Greenwich Transit.					
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. pas. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.	
			h m s	"	"	° ' "	"	
1842. Dec. 12	β Arietis - -	3	1 46 0	36			N.20 2 "	
13	η Piscium - -	4	1 23 7	01			N.14 32	
	β Arietis - -	3	1 46 0	35			20 2	
	Moon I. v.	11.7	2 1 53	94	127.11	65.45	17 38 56.6	+592.0
	Moon I. L.	- -	2 27 46	10	131.63	66.60	19 31 35.8	532.8
	ψ Arietis - -	6	2 22 13	97			17 0	
	τ Arietis - -	5	2 40 34	46			N.16 48	
14	ψ Arietis - -	6	2 22 13	97			N.17 0	
	ν Arietis - -	5	2 40 34	45			16 48	
	Moon I. v.	12.7	2 54 33	81	126.34	67.79	21 11 19.6	+462.6
	Moon I. L.	- -	3 22 18	20	141.03	68.95	22 35 53.3	381.1
	g Arietis - -	5.6	3 15 4	90			24 10	
	ν Tauri - -	3	3 38 12	02			N.23 37	
15	g Arietis - -	5.6	3 15 4	90			N.24 10	
	η Tauri - -	3	3 38 12	02			23 37	
	Moon I. v.	13.7	3 50 57	50	145.45	70.03	23 43 1.2	+288.3
	Moon I. L.	- -	4 20 26	90	149.33	70.96	24 30 31.7	185.1
	v ¹ Tauri - -	5	4 16 57	21			22 27	
	τ Tauri - -	5	4 32 52	07			N.22 39	
16	v ¹ Tauri - -	5	4 16 57	21			N.22 27	
	τ Tauri - -	5	4 32 52	08			22 39	
	Moon I. u.	14.8	4 50 38	06	152.38	71.69	24 56 30.2	+ 73.2
	Moon I. L.	- -	5 21 19	82	154.39	72.16	24 59 25.1	- 44.8
	β Tauri - -	2	5 16 24	91			28 28	
	ζ Tauri - -	3.4	5 28 18	28			N.21 2	
17	β Tauri - -	2	5 16 24	92			N.28 28	
	ζ Tauri - -	3.4	5 28 18	30			21 2	
	Moon II. v.	15.8	5 54 43	48	155.24	72.36	24 38 22.4	-165.9
	μ Geminor.	3	6 13 30	20			22 35	
	ε Geminor.	3	6 34 18	83			N.25 17	
18	μ Geminor.	3	6 13 30	22			N.22 35	
	ε Geminor.	3	6 34 18	85			25 17	
	Moon II. L.	- -	6 25 45	34	157.33	72.28	23 53 5.8	-286.4
	Moon II. v.	16.9	6 56 36	19	159.96	72.96	22 44 6.5	402.5
	δ Geminor.	3.4	7 10 47	03			22 16	
	κ Geminor.	4	7 35 0	12			N.24 46	
19	δ Geminor.	3.4	7 10 47	03			N.22 16	
	κ Geminor.	4	7 35 0	12			24 46	
	Moon II. L.	- -	7 07				21 12 34.4	-511.3
	Moon II. v.	17.9	7 07				19 20 16.5	-609.8
	θ Cancri - -	5.6	h 22				18 37	
	δ Caneri - -	4.5					N.18 44	

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension in Time.	Var. of C's R. A. in 1 hour of Long.	Sidereal Time of C's Sem. paa. mer.	Declination.	Var. of C's Dec. in 1 hour of Long.
1842. Dec. 20	θ Cancri - -	5.6	h m s			N. 18 37	
	δ Cancri - -	4.5	8 22 40 '46			18 44	
	Moon II. L.	- -	8 26 22 '36	145 '16	70 '00	17 9 26 '3	-696 '4
	Moon II. U.	18 '9	8 55 5 '22	142 '01	69 '24	14 42 36 '7	769 '6
	ξ Leonis - *	5	9 23 30 '66			12 0	
	ο Leonis - *	4	9 32 47 '93			N. 10 36	
21	ξ Leonis - *	5	9 23 30 '69			N. 12 0	
	ο Leonis - *	4	9 32 47 '96			10 36	
	Moon II. L.	- -	9 23 11 '48	139 '09	68 '52	12 2 30 '5	-829 '1
	Moon II. U.	20 '0	9 50 45 '14	136 '60	67 '91	9 11 54 '1	874 '7
	ρ Leonis - *	4	10 24 33 '97			N. 10 7	
22	ρ Leonis - *	4	10 24 34 '01			N. 10 7	
	Moon II. L.	- -	10 17 52 '13	134 '67	67 '42	6 13 33 '4	-906 '3
	Moon II. U.	21 '0	10 44 39 '71	133 '38	67 '10	3 10 11 '7	924 '5
	p ⁴ Leonis - -	5.6	11 5 44 '53			N. 0 47	
	e Leonis - -	4.5	11 22 18 '84			S. 2 8	
23	p ⁴ Leonis - -	5.6	11 5 44 '56			N. 0 47	
	e Leonis - -	4.5	11 22 18 '88			S. 2 8	
	Moon II. L.	- -	11 11 16 '13	132 '81	66 '96	N. 0 4 28 '0	-930 '1
	Moon II. U.	22 '0	11 37 50 '04	132 '97	67 '00	S. 3 1 2 '2	922 '7
	η Virginis -	3.4	12 11 53 '37			N. 0 13	
24	η Virginis -	3.4	12 11 53 '40			N. 0 13	
	Moon II. L.	- -	12 4 30 '16	133 '84	67 '22	S. 6 3 46 '0	-902 '3
	Moon II. U.	23 '1	12 31 24 '94	135 '40	67 '61	9 1 11 '6	869 '7
	ψ Virginis -	5.6	12 46 12 '60			8 41	
	53 Virginis -	5	13 3 43 '35			S. 15 21	
25	ψ Virginis -	5.6	12 46 12 '63			S. 8 41	
	53 Virginis -	5	13 3 43 '39			15 21	
	Moon II. L.	- -	12 58 42 '12	137 '56	68 '15	11 50 47 '0	-824 '1
	Moon II. U.	24 '1	13 26 28 '33	140 '21	68 '81	14 30 0 '8	766 '6
	α Virginis -	5.6	13 41 21 '37			17 21	
	κ Virginis -	4	14 4 32 '17			S. 9 32	
26	α Virginis -	5.6	13 41 21 '40			S. 17 21	
	κ Virginis -	4	14 4 32 '20			9 32	
	Moon II. L.	- -	13 54 48 '45	143 '19	69 '54	16 56 20 '8	-695 '1
	Moon II. U.	25 '2	14 23 45 '24	146 '28	70 '29	19 7 17 '3	612 '3
	α ² Libræ - -	3	14 42 12 '46			15 23	
20 Libræ - -	3.4	14 54 54 '19			S. 24 39		
27	Moon II. L.	- -	14 53 18 '63	149 '24	70 '99	S. 21 0 28 '6	-517 '1
	Moon II. U.	26 '2	15 23 25 '35	151 '79	71 '58	22 33 44 '4	413 '3
28	Moon II. L.	- -	15 53 58 '82	153 '65	72 '01	S. 23 45 15 '9	-300 '8
	Moon II. U.	27 '2	16 24 49 '25	154 '58	72 '21	S. 24 33 41 '4	-182 '5

Date.	Name.	Mag- nitude.	At Greenwich Transit.				
			Apparent Right Ascension <i>in Time.</i>	Var. of ☾'s R. A. in 1 hour of Long.	Sidereal Time of ☾'s Sem. pas. mer.	Declination.	Var. of ☾'s Dec. in 1 hour of Long.
1842. Dec. 29	Moon II. L.	- -	^h 16 ^m 55 ^s 44 '44	^s 154 '42	^s 72 '15	S. 24 58 16 '3	- 62 '8
	Moon II. v.	28 '3	17 26 30 '83	153 '11	71 '81	24 58 54 '2	+ 56 '0
30	Moon II. L.	- -	17 56 54 '86	150 '72	71 '22	S. 24 36 10 '7	+170 '2
	Moon II. v.	29 '3	18 26 44 '40	147 '40	70 '40	23 51 18 '1	277 '0
31	Moon I. L.	- -	18 53 30 '83	143 '56	69 '40	S. 22 46 0 '0	+374 '2

OCCULTATIONS OF PLANETS AND FIXED STARS BY THE MOON,

VISIBLE AT GREENWICH.

Day of the Month.	Star's Name.	Magnitude.	Immersion.				Emersion.			
			Sidereal Time.	Mean Time.	Angle from		Sidereal Time.	Mean Time.	Angle from	
					N. Point.	Ver- tex.			N. Point.	Ver- tex.
Jan. 1	<i>p</i> ⁴ Leonis - -	5.6	^h 6 ^m 49†	^h 12 ^m 4	^o 331	^o 295	^h 0 ^m 55	^h 5 ^m 23	^o 319	^o 351
13	<i>s</i> Capricorni - -	5	23 48	4 17	103	127	0 55	5 23	319	351
21	<i>g</i> Pleiadum - -	5.6	8 42	12 38	135	177	9 27	13 23	235	276
21	<i>b</i> Pleiadum - -	4.5	8 35	12 31	93	136	9 34	13 30	276	317
21	<i>e</i> Pleiadum - -	5	9 15†	13 11	185	226				
21	<i>c</i> Pleiadum - -	5	9 17	13 13	156	197	9 44	13 40	213	254
21	<i>d</i> Pleiadum - -	5	9 20	13 16	48	89	9 59	13 55	321	1
21	<i>γ</i> Tauri - - -	3	9 42	13 38	82	123	10 35	14 31	286	324
21	<i>h</i> Pleiadum - -	5.6	10 22	14 18	84	123	11 14	15 9	284	319
21	<i>f</i> Pleiadum - -	5	10 24	14 20	65	104	11 10	15 5	303	339
23	125 Tauri - - -	6	3 48	7 37	41	10	4 34	8 23	322	303
23	139 Tauri - - -	5.6	12 13†	16 1	170	210				
26	<i>α</i> ² Cancrī - - -	6	7 6	10 43	33	9	8 5	11 42	276	264
26	<i>α</i> ¹ Cancrī - - -	6	7 33†	11 9	335	316				
Feb. 22	<i>δ</i> ¹ Cancrī - - -	6	7 8†	8 59	338	320				
22	<i>θ</i> Cancrī - - -	5.6	11 2†	12 52	153	187				
24	<i>z</i> Leonis - - -	6	8 4	9 46	77	52	9 7	10 50	219	204
25	<i>p</i> ⁴ Leonis - - -	5.6	6 38†	8 17	332	295				
Mar. 1	Solitarii - - -	6	15 42	17 4	4	10	16 13	17 34	319	330
2	Scorpii - - -	6	13 10	14 28	112	87	14 8	15 26	214	197
2	<i>m</i> Scorpii - - -	6	15 53	17 11	-70	70	17 13	18 30	268	280
16	<i>ε</i> Arietis - - -	5	5 44†	6 8	14	51				
22	<i>α</i> ² Cancrī - - -	6	7 48	7 48	69	54	8 59	8 59	237	240
22	<i>α</i> ¹ Cancrī - - -	6	8 11	8 11	5	354	8 48	8 48	302	302
23	10 Sextantis - -	6	10 18†	10 14	328	335				
26	<i>q</i> Virginis - - -	5.6	6 27†	6 12	44	5	7 18	7 3	260	223
Apr. 2	<i>χ</i> ⁸ Sagittarii - -	6	15 36	14 52	27	356	16 0	15 16	350	321
13	<i>d</i> Pleiadum - -	5	10 13†	8 46	184	223				
13	<i>f</i> Pleiadum - -	5	11 18†	9 52	184	218				
May 5	<i>λ</i> Piscium - - -	5	17 3†	14 9	89	51	17 55	15 1	323	284
14	<i>p</i> Geminorum - -	6	11 10	7 42	42	84	12 4	8 35	277	319
26	<i>s</i> Sagittarii - -	6	18 47	14 30	138	139	19 54	15 36	250	263
28	<i>α</i> ² Capricorni - -	6	20 8	15 43	165	162	21 2	16 37	247	254

ECCULTATIONS OF PLANETS AND FIXED STARS BY THE MOON, VISIBLE AT GREENWICH.

Day of the Month.	Star's Name.	Magnitude.	Immersion.				Emersion.			
			Sidereal Time.	Mean Time.	Angle from		Sidereal Time.	Mean Time.	Angle from	
					N. Point.	Ver- tex.			N. Point.	Ver- tex.
June 13	π Leonis - -	4.5	^h 12 ^m 40	^h 7 ^m 13	60	91	^h 13 ^m 43	^h 8 ^m 16	238	275
15	B Virginis - -	6	16 30	11 15	63	100	17 47†	18 12	247	286
21	A Ophiuchi - -	4.5	13 21‡	7 22	132	101	14 6	8 7	212	185
26	λ Capricorni - -	5.6	21 36	15 17	86	85	22 40	16 20	341	351
July 12	e Leonis - -	4.5	14 52	7 37	37	69	15 55	8 34	265	301
17	Scorpii - -	6	15 47	8 6	59	58	17 2	9 21	280	290
22	ν Capricorni - -	5	19 35†	11 34	26	16				
24	θ Aquarii - -	4.5	23 38	15 28	94	110	0 43	16 34	333	358
27	45 Piscium - -	6	23 16	14 54	124	111	0 86	16 15	305	309
30	μ Arietis - -	6	20 5	11 32	104	65	21 1	12 22	299	258
31	9 Tauri - -	6	20 50	12 14	148	108	21 32	12 55	247	205
Aug. 16	s Sagittarii - -	6	21 13	11 33	92	116	22 21†	12 41	303	335
18	σ ² Capricorni - -	6	23 17	13 29	90	116	0 18	14 30	324	357
31	δ Geminorum - -	3.4	1 36	14 57	87	46	2 36	15 56	260	218
Sept. 10	α Scorpii - -	1	19 44†	8 26	0	29				
12	λ Sagittarii - -	4	21 31	10 5	90	118	22 37†	11 11	301	336
21	101 Piscium - -	6	5 43	17 41	46	84	6 13	18 10	352	32
23	47 Arietis - -	6	19 44	7 35	108	71	20 39	8 30	291	252
25	k Tauri - -	6	1 2	12 44	117	74	2 9	13 51	263	225
26	B Tauri - -	5	22 8	9 47	84	49	23 0	10 39	284	245
Oct. 14	θ Aquarii - -	4.5	0 22†	10 50	33	54				
16	m Piscium - -	6	3 33†	13 52	209	244				
17	45 Piscium - -	6	23 31	9 47	167	157	0 28	10 44	260	263
20	47 Arietis - -	6	5 23†	15 26	14	48				
23	B Tauri - -	5	6 51	16 42	71	94	8 5	17 56	273	309
26	α ² Cancri - -	6	0 4†	9 45	92	60	0 53	10 34	244	209
27	ξ Leonis - -	5	5 26	15 2	113	75	6 12	15 48	199	165
Nov. 7	JUPITER - -	-	18 42	3 36	118	113	20 5	4 59	279	286
8	π Capricorni - -	5	0 6	8 55	63	95	0 45†	9 34	349	24
12	κ ² Piscium - -	6	0 51	9 25	140	157	2 5	10 38	286	314
12	κ ¹ Piscium - -	5.6	1 14	9 47	189	211	1 45	10 19	237	263
15	101 Piscium - -	6	20 36	4 59	155	115	21 25	5 48	258	220
16	μ Arietis - -	6	6 53	15 10	114	154	7 56	16 13	269	310

OCCULTATIONS OF PLANETS AND FIXED STARS BY THE MOON,
VISIBLE AT GREENWICH.

Day of the Month.	Star's Name.	Magnitude.	Immersion.				Emersion.			
			Sidereal Time.	Mean Time.	Angle from		Sidereal Time.	Mean Time.	Angle from	
					N. Point.	Ver- tex.			N. Point.	Ver- tex.
Nov. 19	Tauri - - -	6	h ^h m ^m 20 26 †	h ^h m ^m 4 33	° 68	° 39	h ^h m ^m 21 9	h ^h m ^m 5 16	° 304	° 270
22	ζ Cancrī - - -	6	1 33	9 27	17	339	1 59	9 53	320	281
22	d ^d Cancrī - - -	6	8 21	16 14	118	119	9 5	16 58	191	204
25	g ^g Leonis - - -	6	8 46 †	16 27	329	306				
26	B Virginis - - -	6	6 19 †	13 57	333	295				
Dec. 14	47 Arietis - - -	6	22 22	4 50	98	57	23 26	5 54	307	267
17	B Tauri - - -	5	23 12 †	5 28	184	144				
19	ζ Cancrī - - -	6	11 26	17 32	82	120	12 25	18 31	230	270
22	n Sextantis - - -	6	6 20	12 15	44	8	7 19	13 15	260	229
22	u Leonis - - -	6	13 7	19 1	22	47	14 1	19 55	275	307

† A near approach.

‡ Star below the horizon.

ELEMENTS

for facilitating the Computation of Occultations of certain Stars by the Moon.

Day of the Month.	Star's Name.	Magnitude.	Greenwich Mean Time of Apparent \odot in R. A. of ζ and $*$.		At Greenwich Mean Time of \odot			Limiting Parallels.								
			h	m	s	Apparent R. A. of ζ and $*$.	Apparent Declination of $*$.		Diff. of Apparent Dec. of ζ and $*$.							
Jan. 1	<i>d</i> Leonis	5	6	40	18	10	52	25	59	N. 4	27	46	8	26 S.	86 S.	
1	<i>p</i> ⁴ Leonis	5.6	12	52	0	11	5	41	66	0	47	18	7	90 N.	3 N.	
1	<i>v</i> Leonis	4.5	23	48	37	11	28	52	98	N. 0	2	47	6	38 S.	90 S.	
6	<i>b</i> Scorpii	5	21	28	10	15	41	29	39	S. 25	15	54	2	65 N.	12 N.	
6	<i>A</i> ¹ Scorpii	5	22	38	17	15	44	8	46	S. 24	50	58	2	43 N.	22 S.	
7	π Scorpii	3.4	0	54	45	15	49	18	50	25	39	10	0	64 N.	18 N.	
7	σ Scorpii	4	10	40	57	16	11	35	78	25	12	25	9	5 N.	61 S.	
7	α Scorpii	1	14	14	7	16	19	43	83	S. 26	4	33	1	42 N.	20 S.	
8	<i>A</i> Ophiuchi	4.5	10	14	34	17	5	38	32	S. 26	21	51	7	12 N.	47 S.	
13	<i>s</i> Capricorni	5	3	59	58	21	6	59	85	15	49	28	6	71 N.	1 S.	
14	θ Aquarii	4.5	13	20	53	22	8	29	55	S. 8	34	3	0	2	43 N.	40 S.
16	λ Piscium	5	13	19	55	23	33	59	81	N. 0	54	46	2	90 N.	19 N.	
18	η Piscium	4	23	43	4	1	23	3	25	N. 14	31	56	1	37 N.	42 S.	
20	ϵ Arietis	5	16	41	17	2	50	12	86	20	42	27	4	90 N.	27 N.	
21	<i>g</i> Pleiadum	5.6	11	54	29	3	35	27	14	23	47	26	9	66 N.	5 S.	
21	<i>b</i> Pleiadum	4.5	11	56	28	3	35	31	93	N. 23	36	53	2	82 N.	5 N.	
21	<i>e</i> Pleiadum	5	12	4	10	3	35	50	67	N. 23	58	11	7	55 N.	13 S.	
21	<i>c</i> Pleiadum	5	12	19	30	3	36	27	94	23	52	19	4	64 N.	7 S.	
21	<i>d</i> Pleiadum	5	12	32	23	3	36	59	30	23	27	15	6	90 N.	18 N.	
21	η Tauri	3	13	0	38	3	38	8	09	N. 23	36	53	8	90 N.	12 N.	
21	<i>f</i> Pleiadum	5	13	41	46	3	39	48	51	N. 23	34	6	4	90 N.	19 N.	
21	<i>h</i> Pleiadum	5.6	13	41	58	3	39	48	97	23	39	7	3	90 N.	14 N.	
23	δ ²⁵ Tauri	6	8	21	6	5	29	59	35	25	48	15	5	90 N.	19 N.	
23	<i>C</i> Tauri	4.5	13	20	34	5	43	26	53	N. 27	34	12	9	44 S.	62 S.	
23	δ ¹³⁹ Tauri	5.6	15	6	53	5	48	13	90	N. 25	55	45	6	65 N.	2 N.	
24	ϵ Geminor.	3	8	5	33	6	34	15	36	25	16	55	9	40 N.	24 S.	
26	δ Cancri	4.5	6	13	53	8	35	44	70	18	43	47	5	4 N.	71 S.	
26	α ¹ Cancri	6	11	18	18	8	48	27	98	N. 15	55	19	7			
26	α ² Cancri	6	11	26	4	8	48	47	36	N. 16	10	51	6			
27	<i>A</i> Leonis	5	16	48	49	9	59	33	49	10	46	1	1			
28	<i>d</i> Leonis	5	16	0	59	10	52	26	32	4	27	42	0			
29	<i>v</i> Leonis	4.5	8	30	36	11	28	53	79	N. 0	2	48	3			
Feb. 3	<i>b</i> Scorpii	5	3	11	34	15	41	30	36	S. 2						
3	<i>A</i> ¹ Scorpii	5	4	21	16	15	44	9	43							
3	π Scorpii	3.4	6	36	58	15	49	19	43							

ELEMENTS

for facilitating the Computation of Occultations of certain Stars by the Moon.

Day of the Month.	Star's Name.	Magnitude.	Greenwich Mean Time of Apparent \odot in R. A. of ζ and \ast .	At Greenwich Mean Time of \odot			Limiting Parallels.
			h m s	Apparent R. A. of ζ and \ast .	Apparent Declination of \ast .	Diff. of Apparent Dec. of ζ and \ast .	
Feb. 3	α Scorpii	1	19 53 50	16 19 44.73	S. 26 4 34.9	N. 21 53	42 N. 20
4	A Ophiuchi	4.5	15 55 46	17 5 39.15	26 21 52.6	S. 4 0	12 N. 47
6	λ Sagittarii	4	0 6 49	18 18 13.72	S. 25 30 5.4	S. 11 43	9 N. 55
12	λ Piscium	5	19 21 26	23 33 59.66	N. 0 54 44.8	N. 57 3	90 N. 16
15	η Piscium	4	6 4 5	1 23 2.91	N. 14 31 53.9	S. 10 18	82 N. 47 S
16	ϵ Arietis	5	23 54 45	2 50 12.47	20 42 26.0	N. 52 50	90 N. 22 N
17	b Pleiadum	4.5	19 45 51	3 35 31.53	23 36 52.3	27 57	75 N. 1 N
17	a Pleiadum	5	19 53 49	3 35 50.27	N. 23 58 10.8	N. 7 30	50 N. 18 S
17	c Pleiadum	5	20 9 40	3 36 27.54	N. 23 52 18.5	N. 15 2	58 N. 11 S
17	d Pleiadum	5	20 22 59	3 36 58.90	23 27 14.6	41 30	90 N. 14 N
17	η Tauri	3	20 52 11	3 38 7.69	23 36 52.9	34 54	87 N. 7 N
17	f Pleiadum	5	21 34 43	3 39 48.11	N. 23 34 5.5	N. 42 4	90 N. 15 N
20	α Geminor.	3	18 23 13	6 34 15.18	N. 25 16 56.6	S. 6 33	36 N. 27 S
22	d' Cancrī	- 6	9 6 17	8 14 21.76	18 50 0.1	N. 52 14	90 N. 14 N
22	θ Cancrī	5.6	12 23 11	8 22 37.67	18 37 21.4	N. 26 15	69 N. 10 S
22	δ Cancrī	4.5	17 37 55	8 35 44.80	N. 18 43 47.4	S. 44 58	2 N. 71 S
24	A Leonis	5	4 19 40	9 59 33.80	N. 10 45 59.3	S. 71 5	24 S. 79 S
24	α Leonis	6	10 50 56	10 14 46.96	7 20 23.4	N. 29 18	71 N. 16 S
25	d Leonis	5	3 14 19	10 52 26.75	4 27 39.0	S. 69 37	22 S. 86 S
25	p' Leonis	5.6	9 5 5	11 5 42.86	N. 0 47 9.9	N. 52 46	90 N. 4 N
25	v Leonis	4.5	19 22 12	11 28 54.28	N. 0 2 38.4	S. 75 3	30 S. 90 S
Mar. 1	Solitarii	6	16 54 1	15 0 41.11	S. 23 22 43.1	N. 72 7	67 N. 43 N
2	b Scorpii	5	10 23 51	15 41 31.29	25 16 0.2	59 34	65 N. 22 N
2	A' Scorpii	5	11 31 48	15 44 10.35	S. 24 51 4.1	N. 27 58	51 N. 15 S
2	π Scorpii	3.4	13 44 11	15 49 20.37	S. 25 39 15.6	N. 63 43	64 N. 29 N
2	Scorpii	6	15 39 25	15 53 50.27	25 25 13.2	39 24	64 N. 2 S
2	m Scorpii	6	17 39 37	15 58 31.89	25 53 56.9	N. 57 59	64 N. 21 N
2	σ Scorpii	4	23 15 2	16 11 37.62	S. 25 12 30.5	S. 8 43	13 N. 51 S
3	α Scorpii	1	2 43 30	16 19 45.73	S. 26 4 37.4	N. 29 59	51 N. 12 S
3	A Ophiuchi	4.5	22 25 9	17 5 40.07	26 21 53.8	N. 3 53	19 N. 38 S
5	λ Sagittarii	4	6 18 51	18 18 14.56	25 30 5.1	S. 4 32	16 N. 47 S
6	JUPITER	-	7 11 7	19 12 19.60	S. 22 23 12.6	S. 69 38	57 S. 90 S
7	π Capricorni	5	15 19 16	20 18 17.08	S. 18 43 28.6	S. 37 51	5 S. 90 S
7	ρ Capricorni	5	16 6 48	20 19 51.33	18 19 51.0	S. 54 8	23 S. 90 S
7	v Capricorni	5	21 48 11	20 31 3.80	18 41 24.4	N. 21 34	55 N. 21 S
8	s Capricorni	5	16 28 47	21 7 0.49	S. 15 49 26.4	N. 43 18	74 N. 1 N

ELEMENTS

for facilitating the Computation of Occultations of certain Stars by the Moon.

Day the Month.	Star's Name.	Magnitude.	Greenwich Mean Time of Apparent ♄ in R. A. of (and *.		At Greenwich Mean Time of ♄			Limiting Parallels.			
			h	m	s	h	m		s	Apparent Declination of *.	Diff. of Apparent Dec. of (and *.
Mar. 14	γ Piscium -	4	11	35	55	1	23	2'69	N. 14 31 52'0	S. 19 3	24 N. 56 S.
16	ε Arietis -	5	5	28	21	2	50	12'08	20 42 24'0	N. 41 49	90 N. 10 N.
17	b Pleiadum	4.5	1	32	17	3	35	31'08	23 36 50'7	N. 16 18	60 N. 10 S.
17	c Pleiadum	5	1	40	23	3	35	49'82	N. 23 58 9'2	S. 4 10	88 N. 28 S.
17	c Pleiadum	5	1	56	27	3	36	27'09	N. 23 52 16'9	N. 3 22	45 N. 21 S.
17	d Pleiadum	5	2	9	58	3	36	58'45	23 27 13'0	29 49	78 N. 3 N.
17	γ Tauri - -	3	2	39	36	3	38	7'24	23 36 51'4	23 13	68 N. 3 S.
17	f Pleiadum	5	3	22	47	3	39	47'66	N. 23 34 3'9	N. 30 22	79 N. 4 N.
20	ε Geminor.	3	2	4	39	6	34	14'73	N. 25 16 57'1	S. 18 5	25 N. 38 S.
22	δ Cancrī -	4.5	3	5	33	8	35	44'56	18 43 48'3	S. 53 41	8 S. 71 S.
22	♁ Cancrī -	6	8	24	5	8	48	27'90	15 55 19'7	N. 48 30	90 N. 8 N.
22	♁ Cancrī -	6	8	32	13	8	48	47'29	N. 16 10 51'6	N. 31 14	75 N. 8 S.
22	ξ Leonis -	5	23	13	17	9	23	28'26	N. 11 59 38'5	N. 83 4	90 N. 58 N.
23	10 Sextantis	6	9	49	50	9	48	5'99	9 40 38'0	N. 65 48	90 N. 22 N.
23	A Leonis -	5	14	48	56	9	59	33'76	10 45 59'3	S. 75 52	33 S. 79 S.
24	d Leonis -	5	14	7	35	10	52	26'83	N. 4 27 38'1	S. 71 8	25 S. 86 S.
25	v Leonis -	4.5	6	22	51	11	28	54'46	N. 0 2 36'7	S. 74 8	29 S. 90 S.
26	q Virginis -	5.6	7	40	29	12	25	40'54	S. 8 35 1'0	N. 35 18	76 N. 11 S.
29	b Scorpii -	5	19	28	21	15	41	32'09	25 16 2'9	72 15	65 N. 47 N.
29	A Scorpii -	5	20	34	26	15	44	11'15	S. 24 51 6'9	N. 40 43	65 N. 2 S.
30	ε Scorpii -	4	7	58	34	16	11	38'49	S. 25 12 32'9	N. 4 32	25 N. 37 S.
30	α Scorpii -	1	11	21	29	16	19	46'57	26 4 39'4	43 21	64 N. 2 N.
31	A Ophiuchi	4.5	6	33	40	17	5	41'00	26 21 54'9	17 47	33 N. 24 S.
Apr. 1	λ Sagittarii	4	13	49	18	18	18	15'46	S. 25 30 4'5	N. 9 40	29 N. 32 S.
2	χ Sagittarii	6	16	3	34	19	15	57'72	S. 24 15 53'3	N. 67 51	66 N. 43 N.
2	JUPITER -	-	22	11	17	19	28	57'35	21 54 12'7	S. 32 6	3 S. 84 S.
3	π Capricorni	5	22	17	31	20	18	17'82	18 43 26'1	25 0	71 S.
3	ρ Capricorni	5	23	4	54	20	19	52'06	S. 18 19 48'5	S. 41 19	10 S.
4	v Capricorni	5	4	45	18	20	31	4'54	S. 18 41 21'6	N. 34	8 S.
4	s Capricorni	5	23	24	17	21	7	1'13	15 49 23'4	54	15 N.
6	θ Aquarii -	4.5	8	40	22	22	8	30'37	S. 8 33 59'9	0	13 S.
8	λ Piscium -	5	8	7	50	23	34	0'00	N. 0 51		5 N.
12	ε Arietis -	5	11	9	46	2	50	11'91	N. 20		1 N.
13	b Pleiadum	4.5	7	1	14	3	35	30'81	23		20 S.
13	e Pleiadum	5	7	9	15	3	35	49'55	33		39 S.
13	c Pleiadum	5	7	25	12	3	36	26'82	N. 24		32 S.

ELEMENTS

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Day of the Month.	Star's Name.	Magnitude.	Greenwich Mean Time of Apparent ♄ in R. A. of ♄ and ♀.	At Greenwich Mean Time of ♄			Limiting Parallels.
				Apparent R. A. of ♄ and ♀.	Apparent Declination of ♀.	Diff. of Apparent Dec. of ♄ and ♀.	
			h m s	h m s	° ' "	♄	Latitude.
Apr. 13	d Pleiadum	5	7 38 36	3 36 58.18	N.23 27 11.4	N.18 19	62° N. 8 S
13	η Tauri - -	3	8 7 59	3 38 6.97	23 36 49.7	11 40	54° N. 13 S.
13	f Pleiadum	5	8 50 49	3 39 47.38	23 34 2.3	N.18 45	62° N. 7 S.
16	ε Geminor.	3	7 44 36	6 34 14.25	N.25 16 57.0	S.33 34	9° N. 55 S.
16	δ Geminor.	3.4	22 28 45	7 10 42.86	N.22 16 2.0	N.58 25	90° N. 30 N
18	δ Cancrī	4.5	9 55 40	8 35 44.16	18 43 49.4	S.68 51	29° S. 71 S.
19	ξ Leonis -	5	6 42 10	9 23 27.93	11 59 39.4	N.69 8	90° N. 30 N
19	τ Leonis -	4.5	19 22 21	9 51 54.15	N. 8 47 47.9	N.80 43	90° N. 49 N.
20	d Leonis -	5	22 52 9	10 52 26.67	N. 4 27 38.5	S.80 39	44° S. 86 S.
21	v Leonis -	4.5	15 34 43	11 28 54.39	N. 0 2 36.6	S.81 9	45° S. 90 S.
26	A' Scorpii -	5	6 22 27	15 44 11.80	S.24 51 9.1	N.50 32	65° N. 9 N.
26	σ Scorpii -	4	17 36 53	16 11 39.17	S.25 12 34.6	N.15 31	35° N. 26 S.
26	α Scorpii -	1	20 56 40	16 19 47.27	S.26 4 41.1	N.54 39	64° N. 16 N.
27	A Ophiuchi	4.5	15 49 26	17 5 41.79	26 21 55.7	N.30 43	48° N. 11 S.
27	θ Ophiuchi	3.4	18 35 24	17 12 21.94	24 50 10.1	S.62 31	49° S. 90 S.
28	λ Sagittarii	4	22 31 46	18 18 16.33	S.25 30 3.7	N.24 36	45° N. 17 S.
30	JUPITER -	-	10 20 36	19 37 20.13	S.21 39 8.6	S. 1 38	27° N. 44 S.
May 1	τ Capricorni	5	6 14 42	20 18 18.70	18 43 22.6	8 27	24° N. 51 S.
1	ρ Capricorni	5	7 1 40	20 19 52.94	18 19 45.1	S.24 46	9° N. 70 S.
1	v Capricorni	5	12 39 23	20 31 5.39	S.18 41 18.1	N.50 37	71° N. 11 N.
2	z Capricorni	5	7 12 8	21 7 1.96	S.15 49 19.4	N.70 55	74° N. 44 N.
3	θ Aquarii -	4.5	16 23 14	22 8 31.08	S. 8 33 55.8	24 8	66° N. 18 S.
5	λ Piscium -	5	15 56 23	23 34 0.56	N. 0 54 49.1	66 32	90° N. 30 N.
12	B Tauri - -	5	15 43 36	5 39 20.55	N.24 30 34.6	N.71 7	90° N. 58 N.
13	z Geminor.	3	13 23 6	6 34 13.95	N.25 16 56.4	S.46 3	4° S. 65 S.
14	δ Geminor.	3.4	3 59 20	7 10 42.51	22 16 2.0	N.44 50	90° N. 15 N.
14	p Geminor.	6	7 5 51	7 18 22.90	21 45 47.9	51 46	90° N. 21 N.
16	ξ Leonis -	5	12 21 51	9 23 27.57	N.11 59 40.6	N.53 39	90° N. 12 N.
16	o Leonis -	4	16 32 7	9 32 44.96	N.10 36 20.8	N.79 44	90° N. 51 N.
17	τ Leonis -	4.5	1 13 7	9 51 53.80	N. 8 47 49.2	65 27	90° N. 23 N.
23	A' Scorpii -	5	15 22 6	15 44 12.20	S.24 51 10.6	53 4	65° N. 13 N.
24	σ Scorpii -	4	2 39 53	16 11 39.66	S.25 12 35.8	N.19 24	39° N. 22 S.
24	α Scorpii -	1	6 0 15	16 19 47.79	S.26 4 42.3	N.58 55	64° N. 22 N.
25	A Ophiuchi	4.5	0 52 59	17 5 42.43	26 21 56.4	N.37 4	57° N. 4 S.
25	θ Ophiuchi	3.4	3 38 30	17 12 22.58	24 50 10.4	S.55 53	40° S. 90 S.
26	λ Sagittarii	4	7 25 37	18 18 17.12	S.25 30 2.9	N.33 52	57° N. 7 S.

ELEMENTS

for facilitating the Computation of Occultations of certain Stars by the Moon.

Day of the Month.	Star's Name.	Magnitude.	Greenwich Mean Time of δ in R. A. of ζ and \ast .				At Greenwich Mean Time of δ			Limiting Parallels.
			<i>Apparent</i>	<i>Apparent</i>	<i>Apparent</i>	<i>Diff. of</i>	<i>Apparent</i>	<i>Apparent</i>	<i>Apparent</i>	
			ζ and \ast .	ζ and \ast .	ζ and \ast .	Dec. of ζ and \ast .	Dec. of ζ and \ast .	Dec. of ζ and \ast .	Latitude.	
May 26	δ Sagittarii	6	h m s	h m s	o ' "	o ' "	o ' "	o ' "	65 N. 4 N.	
26	ν^1 Sagittarii	5	18 46 1	18 35 10.38	S. 25 9 40.9	N. 44 16	S. 68 56	55 S. 90 S.		
27	JUPITER -	-	18 57 20	18 44 41.45	22 55 53.6	S. 68 56	N. 12 36	41 N. 29 S.		
28	π Capricorni	5	18 17 15	19 35 59.65	21 46 18.9	N. 12 36	N. 4 34	36 N. 37 S.		
28	ρ Capricorni	5	14 38 58	20 18 19.56	S. 18 43 19.2	N. 4 34	S. 11 43	21 N. 54 S.		
28	σ^2 Capricorni	6	15 25 33	20 19 53.80	S. 18 19 41.6	S. 11 43	N. 39 2	71 N. 2 S.		
28	ν Capricorni	5	15 55 1	20 20 53.33	19 5 46.8	N. 39 2	63 56	71 N. 30 N.		
31	θ Aquarii	4.5	21 0 38	20 31 6.26	18 41 14.4	63 56	N. 38 22	81 N. 4 S.		
June 4	η Piscium -	4	0 34 17	22 8 31.95	S. 8 33 50.6	N. 38 22	S. 12 45	29 N. 49 S.		
6	ϵ Arietis -	5	10 8 41	1 23 3.75	N. 14 31 54.9	S. 12 45	N. 33 26	82 N. 2 N.		
10	δ Geminor.	3.4	2 59 37	2 50 12.58	20 42 23.0	N. 33 26	38 4	89 N. 8 N.		
12	ξ Leonis -	5	10 57 34	7 10 42.41	22 16 1.6	38 4	N. 43 10	90 N. 1 N.		
12	σ Leonis -	4	18 11 37	9 23 27.32	N. 11 59 41.6	N. 43 10	N. 69 5	90 N. 29 N.		
13	π Leonis -	4.5	22 18 21	9 32 44.70	N. 10 36 21.9	N. 69 5	54 32	90 N. 10 N.		
15	e Leonis -	4.5	6 52 59	9 51 53.54	N. 8 47 50.5	54 32	74 25	88 N. 34 N.		
15	B Virginis -	6	0 47 1	11 22 16.82	S. 2 8 11.1	74 25	N. 64 25	86 N. 19 N.		
19	A^1 Scorpii -	5	10 33 25	11 42 59.65	S. 4 27 31.0	N. 64 25	N. 50 16	65 N. 10 N.		
20	σ Scorpii -	4	22 38 42	15 44 12.36	S. 24 51 11.4	N. 50 16	17 33	37 N. 24 S.		
20	α Scorpii -	1	10 7 35	16 11 39.88	25 12 36.6	17 33	57 21	64 N. 20 N.		
21	A Ophiuchi	4.5	13 31 0	16 19 48.02	26 4 43.2	57 21	N. 36 59	57 N. 4 S.		
21	θ Ophiuchi	3.4	8 38 37	17 5 42.79	S. 26 21 57.0	N. 36 59	S. 55 45	40 S. 90 S.		
22	λ Sagittarii	4	11 25 56	17 12 22.96	S. 24 50 10.7	S. 55 45	N. 36 1	60 N. 5 S.		
23	ν^1 Sagittarii	5	15 25 49	18 18 17.66	25 30 2.6	N. 36 1	S. 66 0	49 S. 90 S.		
23	ν^2 Sagittarii	5	3 0 2	18 44 42.07	22 55 52.5	S. 66 0	S. 68 4	53 S. 90 S.		
23	JUPITER -	-	3 24 52	18 45 38.09	S. 22 51 38.4	S. 68 4	N. 7 30	35 N. 34 S.		
24	π Capricorni	5	21 34 57	19 25 46.01	S. 22 12 46.9	N. 7 30	N. 10			
24	ρ Capricorni	5	22 39 50	20 18 20.31	18 43 16.3	N. 10	S. 6			
25	ν Capricorni	5	23 26 17	20 19 54.55	18 19 38.6	S. 6	N. 69			
26	λ Capricorni	5.6	5 0 20	20 31 7.05	S. 18 41 11.3	N. 69	N. 5			
27	θ Aquarii -	4.5	15 49 28	21 38 5.16	S. 12 5 11.6	N. 5	N. 1			
July 1	η Piscium -	4	8 26 17	22 8 32.79	S. 8 33 45.6	N. 1				
3	ϵ Arietis -	5	18 51 48	1 23 4.59	N. 14 31 59.3					
4	b Pleiadum	4.5	12 17 12	2 50 13.35	N. 20 42 25.7					
4	e Pleiadum	5	7 53 0	3 35 32.00	N. 23 36 49.7					
4	c Pleiadum	5	8 0 52	3 35 50.74	23 58 8.1					
4	d Pleiadum	5	8 16 31	3 36 28.00	23 52 15.1					
4	d Pleiadum	5	8 29 40	3 36 59.35	N. 23 27 15.1					

ELEMENTS

for facilitating the Computation of Occultations of certain Stars by the Moon.

Day of the Month,	Star's Name.	Magnitude.	Greenwich Mean Time of Apparent ♄ in R. A. of ♄ and ♀.	At Greenwich Mean Time of ♄			Limiting Parallels.
				Apparent R. A. of ♄ and ♀.	Apparent Declination of ♀.	Diff. of Apparent Dec. of ♄ and ♀.	
July 4	γ Tauri - -	3	h m s	h m s	° ' "	° ' "	Latitude.
4	f Pleiadum	5	8 58 29	8 38 8.14	N. 23 36 50.4	N. 11 23	54 N. 18 S.
10	f Leonis - -	5	9 40 29	8 39 48.53	23 34 2.9	18 17	61 N. 7 S.
10	o Leonis - -	4	1 51 12	9 23 27.23	11 59 42.3	40 5	88 N. 3 S.
10	o Leonis - -	4	5 50 49	9 32 44.59	N. 10 36 22.8	N. 65 52	90 N. 23 N.
10	τ Leonis - -	4.5	14 10 36	9 51 58.42	N. 8 47 51.5	N. 51 5	90 N. 6 N.
12	e Leonis - -	4.5	6 59 5	11 22 16.60	S. 2 8 9.4	70 22	88 N. 26 N.
17	A' Scorpii -	5	4 26 21	15 44 12.26	24 51 11.7	48 9	65 N. 8 N.
17	Scorpii - -	6	8 32 26	15 53 52.30	S. 25 25 20.7	N. 61 7	65 N. 26 N.
17	σ Scorpii -	4	16 4 2	16 11 39.84	S. 25 12 37.0	N. 15 42	36 N. 26 S.
17	α Scorpii -	1	19 30 9	16 19 47.99	26 4 43.6	55 35	64 N. 18 N.
18	α Ophiuchi	4.5	14 53 40	17 5 42.64	26 21 57.6	N. 35 39	55 N. 5 S.
18	θ Ophiuchi	3.4	17 43 19	17 12 23.04	S. 24 50 11.0	S. 57 2	42 S. 90 S.
19	λ Sagittarii	4	22 4 49	18 18 17.90	S. 25 30 2.8	N. 35 16	59 N. 5 S.
20	ν ¹ Sagittarii	5	9 46 28	18 44 42.36	22 55 52.2	S. 66 34	50 S. 90 S.
20	ν ² Sagittarii	5	10 11 34	18 45 38.89	22 51 38.1	68 38	53 S. 90 S.
20	JUPITER - -	-	21 47 51	19 11 14.48	S. 22 43 53.1	S. 7 54	19 N. 50 S.
22	τ Capricorni	5	5 43 27	20 18 20.82	S. 18 43 14.5	N. 9 59	42 N. 32 S.
22	ρ Capricorni	5	6 30 3	20 19 55.08	18 19 36.7	S. 6 16	26 N. 48 S.
22	ν Capricorni	5	12 5 0	20 31 7.58	18 41 9.4	N. 69 41	71 N. 43 N.
24	θ Aquarii -	4.5	15 31 27	22 8 33.46	S. 8 33 41.5	N. 45 54	81 N. - 4 N.
27	45 Piscium -	6	15 41 38	0 17 36.22	N. 6 49 25.7	N. 39 36	90 N. 2 S.
29	γ Piscium -	4	2 37 35	1 23 5.50	14 32 4.6	S. 7 23	34 N. 43 S.
30	μ Arietis -	6	13 10 46	2 33 30.14	19 20 23.0	N. 53 22	90 N. 22 N.
30	e Arietis -	5	20 54 19	2 50 14.24	N. 20 42 29.4	N. 36 40	90 N. 6 N.
31	9 Tauri - -	6	13 35 21	3 27 43.94	N. 22 41 15.8	N. 38 38	90 N. 11 N.
31	b Pleiadum	4.5	16 57 57	3 35 32.87	23 36 52.4	N. 3 40	45 N. 21 S.
31	e Pleiadum	5	17 6 0	3 35 51.61	23 58 10.7	S. 16 51	25 N. 40 S.
31	c Pleiadum	5	17 22 0	3 36 28.87	N. 23 52 18.4	S. 9 25	32 N. 33 S.
31	d Pleiadum	5	17 35 28	3 37 0.22	N. 23 27 14.6	N. 16 58	60 N. 8 S.
31	γ Tauri - -	3	18 4 58	3 38 9.00	23 36 53.0	10 10	52 N. 14 S.
31	f Pleiadum	5	18 47 57	3 39 49.40	23 34 5.5	17 4	60 N. 8 S.
Aug. 2	B Tauri - -	5	19 7 34	5 39 21.79	N. 24 30 34.1	N. 67 33	90 N. 51 N.
3	α Geminor.	3	16 18 27	6 34 14.80	N. 25 16 54.2	S. 52 24	10 S. 65 S.
4	β Geminor.	3.4	6 23 17	7 10 43.10	N. 22 16 6.6	N. 36 45	86 N. 6 N.
8	e Leonis - -	4.5	15 15 35	11 22 16.45	S. 2 8 7.8	73 11	88 N. 29 N.
13	A' Scorpii -	5	10 0 45	15 44 11.93	S. 24 51 11.2	N. 52 8	65 N. 12 N.

ELEMENTS

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			h	m	s	h	m	s	
									Latitude.
			♄	♄	♄	♄	♄	♄	♄
Aug. 13	♄ Scorpii -	4	21 35 32	16 11 39	54	S. 25 12 36	8	N. 19 33	40 N. 22 S.
14	♄ Scorpii -	1	1 1 16	16 19 47	68	26 4 43	6	59 23	64 N. 24 N.
14	♄ Ophiuchi	4.5	20 25 59	17 5 42	61	26 21 57	9	N. 39 6	61 N. 1 S.
14	♄ Ophiuchi	3.4	23 16 15	17 12 22	83	S. 24 50 11	2	S. 53 38	38 S. 90 S.
16	♄ Sagittarii	4	3 48 9	18 18 17	80	S. 25 30 3	4	N. 37 58	62 N. 2 S.
16	♄ Sagittarii	6	11 18 46	18 35 11	19	25 9 41	0	N. 48 46	65 N. 10 N.
16	♄ Sagittarii	5	15 35 30	18 44 42	32	22 55 52	5	S. 64 15	46 S. 90 S.
16	♄ Sagittarii	5	16 0 48	18 45 38	35	S. 22 51 38	4	S. 66 19	50 S. 90 S.
16	JUPITER -	-	22 18 28	18 59 29	21	S. 23 5 9	6	S. 18 4	8 N. 62 S.
18	♄ Capricorni	5	11 52 56	20 18 20	99	18 43 14	0	N. 10 33	42 N. 31 S.
18	♄ Capricorni	5	12 39 49	20 19 55	24	18 19 36	2	S. 5 44	27 N. 48 S.
18	♄ Capricorni	6	13 9 29	20 20 54	78	S. 19 5 41	7	N. 45 2	71 N. 5 N.
18	♄ Capricorni	5	18 16 43	20 31 7	77	S. 18 41 8	9	N. 69 57	71 N. 44 N.
20	♄ Aquarii -	4.5	21 50 34	22 8 33	86	S. 8 33 39	0	N. 43 20	81 N. 1 N.
25	♄ Piscium -	4	9 3 50	1 23 6	25	N. 14 32 9	6	S. 15 16	26 N. 51 S.
27	♄ Arietis -	5	3 59 4	2 50 15	13	N. 20 42 33	5	N. 28 1	75 N. 2 S.
28	♄ Pleiadum	4.5	0 31 25	3 35 33	80	N. 23 36 55	8	S. 4 59	36 N. 29 S.
28	♄ Pleiadum	5	0 39 41	3 35 52	54	23 58 13	9	25 30	16 N. 50 S.
28	♄ Pleiadum	5	0 56 7	3 36 29	80	23 52 21	6	S. 18 4	23 N. 42 S.
28	♄ Pleiadum	5	1 9 56	3 37 1	15	N. 23 27 18	0	N. 8 19	50 N. 16 S.
28	♄ Tauri -	3	1 40 12	3 38 9	93	N. 23 36 56	2	N. 1 32	43 N. 22 S.
28	♄ Pleiadum	5	2 24 20	3 39 50	33	23 34 8	7	8 26	50 N. 16 S.
30	♄ Tauri -	5	4 11 23	5 39 22	65	24 30 34	7	N. 59 54	90 N. 42 N.
31	♄ Geminor.	3	2 0 43	6 34 15	58	N. 25 16 53	6	S. 59 10	20 S. 65 S.
31	♄ Geminor.	3.4	16 28 16	7 10 43	76	N. 22 15 59	6	N. 30 47	76 N. 1 N.
Sept. 9	♄ Scorpii -	5	16 54 36	15 44 11	50	S. 24 51 9	6	63 8	65 N. 27 N.
10	♄ Scorpii -	4	4 13 33	16 11 39	09	25 12 3	-	0 35	52 N. 11 S.
10	♄ Scorpii -	1	7 35 3	16 19 47	25	S. 26 4	-	0 24	64 N. 45 N.
11	♄ Ophiuchi	4.5	2 39 43	17 5 42	15	S. 26 21	-	1 55	64 N. 11 S.
11	♄ Ophiuchi	3.4	5 27 89	17 12 22	39	24 1	-	1 52	26 S. 90 S.
11	♄ Sagittarii	4	9 43 42	18 18 17	43	24 1	-	1 59	64 N. 90 S.
12	♄ Sagittarii	5	21 28 13	18 44 41	98	24 22	-	40	32 S. 90 S.
12	♄ Sagittarii	5	21 53 28	18 45 38	02	24 22	-	46	35 S. 90 S.
13	JUPITER -	-	2 37 14	18 56 4	62	24 22	-	3	14 N. 2 S.
14	♄ Capricorni	5	17 47 56	20 18 20	82	24 22	-	17	50 N. 2 S.
14	♄ Capricorni	5	18 34 58	20 19 55	08	24 22	-	1	33 N. 2 S.

ELEMENTS

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				Apparent R. A. of ζ and \ast .	Apparent Declination of \ast .	Diff of Apparent Dec. of ζ and \ast .	
			h m s	h m s	$^{\circ}$ ' "	$^{\circ}$ ' "	Latitude.
Sept. 17	θ Aquarii	4.5	8 54 15	22 8 33.94	S. 8 33 38.1	N. 45 13	81 N. 4 N.
21	η Piscium	4	14 44 48	1 23 6.78	N. 14 32 13.4	S. 24 33	17 N. 61 S.
21	101 Piscium	6	16 57 31	1 27 23.81	13 51 35.6	N. 40 16	90 N. 3 N.
23	47 Arie	6	9 10 50	2 49 6.32	N. 20 2 19.2	N. 51 48	90 N. 23 N.
23	ϵ Arietis	5	9 43 29	2 50 15.86	N. 20 42 37.0	N. 15 46	58 N. 14 S.
24	b Pleiadum	4.5	6 27 56	3 35 34.60	23 36 58.6	S. 18 10	23 N. 42 S.
24	e Pleiadum	5	6 36 19	3 35 53.35	23 58 16.9	38 41	2 N. 65 S.
24	c Pleiadum	5	6 52 58	3 36 30.61	N. 23 52 24.6	S. 31 16	10 N. 57 S.
24	d Pleiadum	5	7 6 58	3 37 1.95	N. 23 27 20.9	S. 4 54	36 N. 28 S.
24	η Tauri	3	7 37 39	3 38 10.73	23 36 59.0	11 42	29 N. 35 S.
24	f Pleiadum	5	8 22 23	3 39 51.14	23 34 11.6	S. 4 50	36 N. 28 S.
25	k Tauri	6	14 4 56	4 48 32.98	N. 24 48 10.6	N. 27 6	74 N. 8 N.
26	B Tauri	5	11 15 29	5 39 23.53	N. 24 30 35.1	N. 45 50	90 N. 26 N.
27	ϵ Geminor.	3	9 47 6	6 34 16.44	25 16 52.8	S. 72 55	50 S. 65 S.
28	δ Geminor.	3.4	0 45 12	7 10 44.59	22 15 58.2	N. 17 32	60 N. 10 S.
30	ξ Leonis	5	8 35 31	9 23 28.20	N. 11 59 39.4	N. 30 52	74 N. 10 S.
30	\circ Leonis	4	12 36 17	9 32 45.49	N. 10 36 20.3	N. 57 42	90 N. 15 N.
30	π Leonis	4.5	20 54 49	9 51 54.15	8 47 49.6	45 11	90 N. 1 N.
Oct. 1	ν Sextantis	6	16 39 16	10 37 2.81	N. 3 18 55.9	N. 69 20	90 N. 24 N.
7	VENUS	-	4 34 23	15 50 56.16	S. 23 44 42.7	S. 4 48	18 N. 46 S.
7	σ Scorpii	4	12 51 38	16 11 38.69	S. 25 12 34.3	N. 44 37	65 N. 3 N.
8	A Ophiuchi	4.5	10 40 46	17 5 41.69	26 21 56.6	N. 64 54	64 N. 33 N.
8	θ Ophiuchi	3.4	13 24 22	17 12 21.93	24 50 10.1	S. 27 48	11 S. 74 S.
9	λ Sagittarii	4	17 2 17	18 18 16.94	S. 25 30 3.8	N. 63 34	64 N. 32 N.
10	SATURN	-	1 4 42	18 36 46.09	S. 22 50 24.3	S. 61 53	42 S. 90 S.
10	ν^1 Sagittarii	5	4 34 20	18 44 41.49	22 55 53.2	39 5	14 S. 90 S.
10	ν^2 Sagittarii	5	4 59 9	18 45 37.53	22 51 39.1	41 11	16 S. 90 S.
10	\circ Sagittarii	4.5	9 17 12	18 55 16.54	S. 21 57 53.2	S. 71 29	61 S. 90 S.
10	JUPITER	-	12 39 45	19 2 46.69	S. 23 3 39.9	N. 14 10	39 N. 27 S.
12	π Capricorni	5	0 25 25	20 18 20.42	18 43 15.5	32 6	66 N. 9 S.
12	ρ Capricorni	5	1 12 11	20 19 54.68	18 19 37.6	15 44	48 N. 25 S.
14	θ Aquarii	4.5	10 25 22	22 8 33.75	S. 8 33 38.6	N. 55 20	81 N. 16 N.
16	m Piscium	6	12 31 44	23 38 23.82	N. 2 37 9.5	N. 10 48	52 N. 30 S.
17	45 Piscium	6	10 8 50	0 17 37.36	6 49 35.2	N. 28 10	73 N. 13 S.
18	η Piscium	4	20 49 32	1 23 7.08	14 32 15.9	S. 28 16	13 N. 66 S.
20	47 Arietis	6	14 50 35	2 49 6.84	N. 20 2 21.7	N. 42 59	90 N. 13 N.

ELEMENTS

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			Apparent ϕ in R. A. of ζ and $*$.				Apparent R. A. of ζ and $*$.	Apparent Declination of $*$.	Diff. of Apparent Dec. of ζ and $*$.		
			h	m	s	o					'
Oct. 20	ϵ Arietis -	5	15	22	56	2 50 16	39	N. 20 42 39	6	54	48 N. 22 S.
21	b Pleiadum	4.5	11	57	59	3 35 35	25	23 37 0	9	29	12 N. 54 S.
21	e Pleiadum	5	12	6	18	3 35 54	00	23 58 19	2	49	11 S. 66 S.
21	c Pleiadum	5	12	22	51	3 36 31	26	N. 23 52 26	9	42	2 S. 66 S.
21	d Pleiadum	5	12	36	46	3 37 2	61	N. 23 27 23	2	15	25 N. 39 S.
21	η Tauri - -	3	13	7	17	3 38 11	38	23 37 1	2	22	18 N. 46 S.
21	f Pleiadum	5	13	51	47	3 39 51	80	23 34 13	8	15	25 N. 39 S.
23	B Tauri - -	5	16	48	27	5 39 24	38	N. 24 30 35	1	30	79 N. 12 N.
25	δ Geminor.	3.4	6	54	34	7 10 45	46	N. 22 15 56	2	1	42 N. 24 S.
26	d^2 Cancrī -	6	11	9	45	8 16 56	44	17 33 36	1	34	81 N. 1 S.
27	ξ Leonis -	5	16	27	45	9 23 28	93	11 59 35	8	15	56 N. 23 S.
27	σ Leonis -	4	20	37	7	9 32 46	20	N. 10 36 16	8	42	90 N. 1 N.
28	π Leonis -	4.5	5	13	32	9 51 54	85	N. 8 47 45	9	31	74 N. 11 S.
29	e Leonis -	4.5	22	7	53	11 22 17	20	S. 2 8 9	9	67	88 N. 23 N.
Nov. 4	θ Ophiuchi	3.4	23	3	0	17 12 21	63	24 50 9	0	15	0 57 S.
5	4 Sagittarii	5	14	22	59	17 50 11	93	S. 23 47 41	0	60	42 S. 90 S.
6	SATURN -	-	13	14	25	18 44 28	09	S. 22 45 47	2	34	9 S. 86 S.
6	r^1 Sagittarii	5	13	20	3	18 44 41	09	22 55 53	0	23	1 N. 68 S.
6	r^2 Sagittarii	5	13	44	20	18 45 37	12	22 51 38	9	26	1 S. 71 S.
6	σ Sagittarii	4.5	17	56	51	18 55 16	13	S. 21 57 53	1	56	32 S. 90 S.
7	JUPITER -	-	4	14	31	19 18 24	78	S. 22 38 31	3	50	67 N. 12 N.
8	π Capricorni	5	8	22	31	20 18 19	99	18 43 16	3	48	71 N. 9 N.
8	ρ Capricorni	5	9	8	37	20 19 54	25	18 19 38	5	32	66 N. 9 S.
10	θ Aquarii -	4.5	17	53	26	22 8 33	41	S. 8 33 39	9	70	81 N. 40 N.
12	κ^1 Piscium -	5.6	9	5	27	23 18 54	26	N. 0 23 59	1	18	61 N. 23 S.
12	κ^2 Piscium -	6	9	16	0	23 19 13	13	0 15 54	6	28	74 N. 13 S.
15	η Piscium -	4	4	9	38	1 23 7	14	14 32 16	9	23	18 N. 60 S.
15	101 Piscium	6	6	20	19	1 27 24	20	N. 13 51 38	8	40	90 N. 4 N.
16	μ Arietis -	6	14	34	16	2 33 32	44	N. 19 20 35	0	24	60 N. 6 S.
16	ϵ Arietis -	5	22	19	43	2 50 16	70	20 42 41	1	5	88 N. 22 S.
17	b Pleiadum	4.5	18	37	40	3 35 35	69	23 37 2	4	32	8 N. 58 S.
17	e Pleiadum	5	18	45	53	3 35 54	44	N. 23 58 20	8	53	66 S.
17	c Pleiadum	5	19	2	11	3 36 31	70	N. 23 52 28	4	13	66 S.
17	d Pleiadum	5	19	15	53	3 37 3	05	23 27 24	7	13	43 S.
17	η Tauri - -	3	19	45	57	3 38 11	83	23 37 2	8	13	50 S.
17	f Pleiadum	5	20	29	46	3 39 52	25	N. 23 34 13	8	13	43 S.

ELEMENTS

for facilitating the Computation of Occultations of certain Stars by the Moon.

Day of the Month.	Star's Name.	Magnitude.	Greenwich Mean Time of Apparent ϕ in R. A. of ζ and \ast .	At Greenwich Mean Time of ϕ			Limiting Parallels.
				Apparent R. A. of ζ and \ast .	Apparent Declination of \ast .	Diff. of Apparent Dec. of ζ and \ast .	
			h m s	h m s	$^{\circ}$ ' "	$^{\circ}$ ' "	Latitude.
Nov. 19	Tauri - -	6	5 50 5	4 58 34.81	N.24 3 11.0	N.56 19	90 N. 40 N.
19	B Tauri - -	5	22 39 33	5 39 25.12	24 30 34.9	N.21 56	66 N. 3 N.
21	δ Geminor.	3.4	12 23 21	7 10 46.33	22 15 54.1	S.10 54	30 N. 36 S.
22	ξ Cancri -	6	10 41 5	8 3 13.29	N.18 7 0.8	N.47 45	90 N. 13 N.
22	d° Cancri -	6	16 38 30	8 16 57.33	N.17 33 32.5	N.20 27	62 N. 14 S.
23	ξ Leonis -	5	22 15 25	9 23 29.79	11 59 31.2	1 22	42 N. 36 S.
24	\circ Leonis -	4	2 29 6	9 32 47.10	10 36 11.9	28 29	71 N. 12 S.
24	τ Leonis -	4.5	11 15 35	9 51 55.70	N. 8 47 41.1	N.16 46	57 N. 24 S.
25	g^1 Leonis -	6	16 48 53	10 55 34.62	N. 0 50 40.2	N.63 25	90 N. 19 N.
26	e Leonis -	4.5	5 15 39	11 22 17.99	S. 2 8 14.5	55 13	88 N. 10 N.
26	B Virginis -	6	14 51 34	11 43 0.57	4 27 32.8	N.50 19	86 N. 5 N.
Dec. 3	ν^1 Sagittarii	5	22 58 34	18 44 40.93	S.22 55 52.5	S.15 52	9 N. 58 S.
3	ν^2 Sagittarii	5	23 22 32	18 45 36.96	S.22 51 38.4	S.17 54	7 N. 60 S.
4	\circ Sagittarii	4.5	3 31 38	18 55 15.95	21 57 52.8	47 40	21 S. 90 S.
4	SATURN -	-	3 47 59	18 55 53.73	22 34 34.1	S. 9 20	16 N. 51 S.
5	τ Capricorni	5	17 22 24	20 18 19.70	S.18 43 16.8	N.59 23	71 N. 22 N.
5	ρ Capricorni	5	18 7 47	20 19 53.95	S.18 19 39.0	N.43 3	72 N. 2 N.
12	η Piscium -	4	12 39 10	1 23 7.01	N.14 32 16.6	S.16 30	25 N. 52 S.
14	47 Arietis -	6	6 22 56	2 49 7.21	20 2 23.5	N.46 7	90 N. 17 N.
14	ε Arietis -	5	6 54 49	2 50 16.76	N.20 42 41.6	N. 9 55	51 N. 19 S.
15	b Pleiadum	4.5	3 7 52	3 35 35.88	N.23 37 3.3	S.30 13	11 N. 55 S.
15	e Pleiadum	5	3 16 1	3 35 54.63	23 58 21.7	50 46	12 S. 66 S.
15	c Pleiadum	5	3 32 12	3 36 31.89	23 52 29.3	43 25	3 S. 66 S.
15	d Pleiadum	5	3 45 49	3 37 3.24	N.23 27 25.5	S.17 7	24 N. 40 S.
15	η Tauri - -	3	4 15 40	3 38 12.02	N.23 37 3.6	S.24 4	17 N. 47 S.
15	f Pleiadum	5	4 59 11	3 39 52.45	23 34 16.1	S.17 25	23 N. 40 S.
17	B Tauri - -	5	6 28 35	5 39 25.66	24 30 34.8	N.20 21	63 N. 1 N.
18	δ Geminor.	3.4	19 22 49	7 10 47.04	N.22 15 52.3	S.15 4	26 N. 40 S.
19	ξ Cancri -	6	17 9 28	8 3 14.08	N.18 6 57.7	N.42 17	90 N. 7 N.
21	ξ Leonis -	5	4 2 7	9 23 30.69	11 59 26.3	S. 5 40	36 N. 42 S.
21	\circ Leonis -	4	8 12 2	9 32 47.96	10 36 7.0	N.21 20	62 N. 19 S.
21	τ Leonis -	4.5	16 51 49	9 51 56.58	N. 8 47 35.9	N. 9 24	50 N. 30 S.
22	n Sextantis	6	13 38 12	10 37 5.13	N. 3 18 42.1	N.36 9	81 N. 8 S.
22	u Leonis -	6	18 32 57	10 47 39.00	N. 1 34 17.1	67 24	90 N. 24 N.
23	e Leonis -	4.5	10 43 49	11 22 18.88	S. 2 8 20.2	47 40	88 N. 2 N.
28	σ Scorpii -	4	17 3 53	16 11 39.31	S.25 12 32.4	N.54 48	65 N. 16 N.

ECLIPSES OF THE SUN AND MOON.

In the Year 1842 there will be three Eclipses of the Sun and two of the Moon.

I.—An Annular Eclipse of the SUN, Jan. 11, 1842, invisible at Greenwich.

- Begins on the Earth generally Jan. 11^d 1^h 52^m-0, Mean Time at Greenwich, in Longitude 139° 4' W. of Greenwich, and Latitude 44° 40' S.
- Central and Annular Eclipse begins generally Jan. 11^d 3^h 31^m-7, in Longitude 160° 3' E. of Greenwich, and Latitude 65° 9' S.
- Central and Annular Eclipse at Noon Jan. 11^d 3^h 58^m-2, in Longitude 57° 28' W. of Greenwich, and Latitude 88° 41' S.
- Central and Annular Eclipse ends generally Jan. 11^d 5^h 19^m-4, in Longitude 34° 50' E. of Greenwich, and Latitude 44° 2' S.
- Ends on the Earth generally Jan. 11^d 6^h 59^m-1, in Longitude 5° 4' W. of Greenwich, and Latitude 18° 27' S.

The central line passes over the points on the Earth's surface, whose positions are,

Longitude	160	3	E.	} of Greenwich.	Latitude	65	9	S.	
	169	17					72	54	
	176	33	E.				79	8	
	167	53	W.				86	9	
	57	28					88	41	
	7	1	W.				82	48	
	6	4	E.				68	58	
	13	37					59	22	
	19	25					53	39	
	25	30					49	3	
	34	50	E.				44	2	S.

The Northern limit of this Eclipse, or the line traversed by the Northern edge of the Penumbra, passes over the points on the Earth's surface, whose positions are,

Longitude	139	49	} W. of C		30	30	S.	
	125	0				16	23	
	104	54				2	29	
	88	24				1	46	
	70	14					33	
	48	42					48	
	37	16					20	
	27	31					37	
	13	44					0	
	0	55						S.

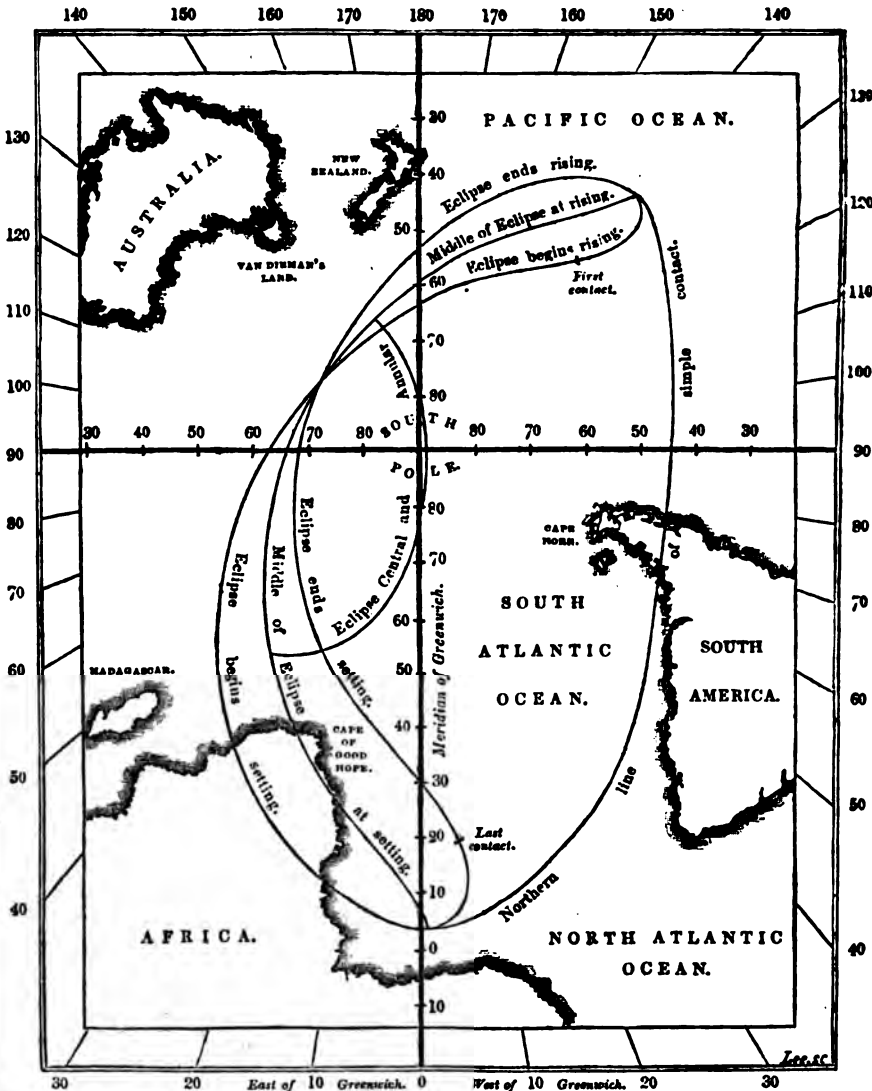
At the Cape of Good Hope a Partial Eclipse is visible, and

Begins - - - -	Jan. 11 ^d	5 ^h 58 ^m ·4	} Mean Time at the Cape.
Greatest Phase	—	6 56·7	
Ends - - - -	—	7 55·0	

Magnitude of the Eclipse (Sun's diameter = 1) 0·749, on the Southern limb.

Angle from North Pole of	{	first contact, 123° towards the West.
		last contact, 81° towards the East.
Angle from Vertex of	{	first contact, 111° towards the East.
		last contact, 45° towards the West.

PATH OF THE MOON'S PENUMBRA OVER THE SURFACE OF THE EARTH DURING THE ANNULAR SOLAR ECLIPSE OF JANUARY 11, 1842.



II.—A Partial Eclipse of the MOON, Jan. 26, 1842, visible at Greenwich.

First contact with the Penumbra at	-	-	^h 3	^m 15	·7	} Mean Time at Greenwich.
First contact with the Shadow	-	-	4	17	·6	
Middle of Eclipse	-	-	5	43	·7	
Last contact with the Shadow	-	-	7	9	·7	
Last contact with the Penumbra	-	-	8	11	·7	

At these times respectively the Moon will be in the Zenith of the places whose positions are,

Longitude	132°	38'	} E. of Greenwich.	Latitude	18°	45' N.	
	117	46				18	32
	97	6				18	14
	76	26				17	55
	61	33				17	41 N.

Magnitude of the Eclipse (Moon's diameter = 1) 0·792, on the Northern limb.

Angle from North Pole of { first contact with Shadow 75°, towards the East.
last contact with Shadow 35°, towards the West.

At Greenwich the Moon will rise at 4^h 34^m partially eclipsed.

III.—A Total Eclipse of the SUN, July 7, 1842.

Begins on the Earth generally July 7^d 16^h 32^m·1, Mean Time at Greenwich,
in Longitude 10° 30' E. of Greenwich, and Latitude 27° 55' N.

Central and Total Eclipse begins generally July 7^d 17^h 33^m·2,
in Longitude 10° 21' W. of Greenwich, and Latitude 37° 9' N.

Central and Total Eclipse at Noon July 7^d 18^h 54^m·8,
in Longitude 77° 27' E. of Greenwich, and Latitude 51° 47' N.

Central and Total Eclipse ends generally July 7^d 20^h 38^m·1,
in Longitude 147° 54' E. of Greenwich, and Latitude 14° 52' N.

Ends on the Earth generally July 7^d 21^h 39^m·2,
in Longitude 128° 31' E. of Greenwich, and Latitude 5° 17' N.

The Centre of the Shadow passes over the points on the Earth's surface, whose positions are,

Longitude	10°	19' W.	} of Green	Latitude	37°	7' N.	
	2	49 E.				42	39
	19	24				48	32
	40	29				53	5
	67	39				53	22
	77	27				51	48
	97	3				44	50
	113	13				35	6
	125	33				26	43
	137	7				19	51
	147	47 E.				14	50

The Northern limit of Total Phase, or the line traversed by the Northern edge of the Shadow, passes over the points,

Longitude	0	5	W.	} of Greenwich.	Latitude	42	30	N.	
	18	2	E.				49	1	
	39	47					53	45	
	67	38					54	9	
	97	40					45	32	
	114	2					35	37	
	126	42					27	6	
	139	27	E.				19	45	N.

The Southern limit of Total Phase passes over the points,

Longitude	4	36	} E. of Greenwich.	Latitude	42	31	N.	
	20	35				48	2	
	41	11				52	22	
	67	39				52	38	
	96	31				44	15	
	111	30				34	36	
	124	41				26	22	
	135	46				19	46	N.

The Southern limit of this Eclipse, or the line traversed by the Southern edge of the Penumbra, passes over the points,

Longitude	7	35	} E. of Greenwich.	Latitude	8	5	N.	
	24	27				14	53	
	38	23				19	32	
	50	21				21	59	
	63	58				22	1	
	83	19				15	13	
	94	24				7	56	
	104	1				1	7	N.
	116	3				6	36	S.
	132	18				14	44	S.

At Greenwich, a Partial Eclipse is visible, and

Begins	- - - - -	July 7 ^a 16 ^h 53 ^m ·5	} Mean Time at Greenwich.
Greatest Phase	- - - - -	17 46 ·5	
Ends	- - - - -	18 43 ·1	

Magnitude of the Eolipse (Sun's diameter = 1) 0·801, on the Southern limb.

Angle from North Pole of { first contact 97°, towards the West.
 last contact 109°, towards the East.

Angle from Vertex of { first contact 60°, towards the West.
 last contact 151°, towards the East.

For any place, not far distant from Greenwich, whose latitude is l , + North, — South, and longitude λ , + East, — West, the time t of beginning may be computed by the formulæ,

$$\cos \omega = 1 \cdot 14945 - [0 \cdot 23116] \sin l + [9 \cdot 87675] \cos l \cos (\lambda - 93^\circ 49' \cdot 2)$$

$$t = 18^h 50^m 55^s - [3 \cdot 50062] \sin \omega - [2 \cdot 71319] \sin l - [3 \cdot 76905] \cos l \cos (\lambda - 14^\circ 58' \cdot 6)$$

Contact on \odot 's limb, $\omega = 5^\circ 28' \cdot 4$ from the North towards the West.

Also the time t of ending, by the formulæ,

$$\cos \omega = 0 \cdot 91898 - [0 \cdot 23201] \sin l + [9 \cdot 87819] \cos l \cos (\lambda - 64^\circ 29' \cdot 8)$$

$$t = 19^h 1^m 43^s + [3 \cdot 55669] \sin \omega - [2 \cdot 84830] \sin l - [3 \cdot 82539] \cos l \cos (\lambda + 12^\circ 3' \cdot 2)$$

Contact on \odot 's limb, $\omega + 6^\circ 32' \cdot 6$ from the North towards the East.

At Edinburgh, a Partial Eclipse is visible, and

Begins - - - - -	July 7 ^d 16 ^h 48 ^m \cdot 6	}	Mean Time at Edinburgh.
Greatest Phase - - - - -	17 39 \cdot 8		
Ends - - - - -	18 34 \cdot 0		

Magnitude of the Eclipse (Sun's diameter = 1) 0 \cdot 687, on the Southern limb.

Angle from North Pole of { first contact 103°, towards the West.
last contact 116°, towards the East.

Angle from Vertex of { first contact 70°, towards the West.
last contact 153°, towards the East.

At Dublin, a Partial Eclipse is visible, and

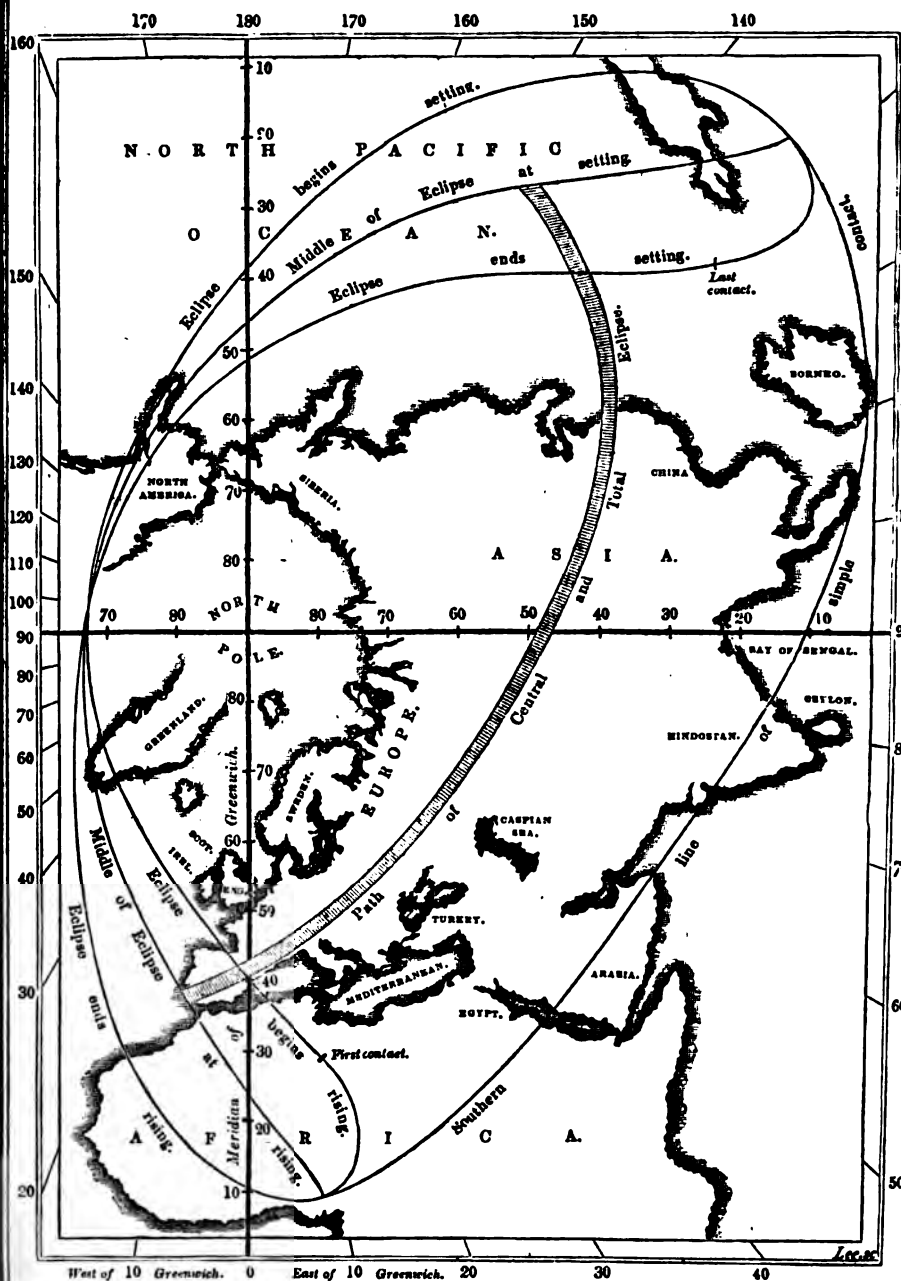
Begins - - - - -	July 7 ^d 16 ^h 33 ^m \cdot 5	}	Mean Time at Dublin.
Greatest Phase - - - - -	17 24 \cdot 2		
Ends - - - - -	18 17 \cdot 9		

Magnitude of the Eclipse (Sun's diameter = 1) 0 \cdot 711, on the Southern limb.

Angle from North Pole of { first contact 102°, towards the West.
last contact 114°, towards the East.

Angle from Vertex of { first contact 68°, towards the West.
last contact 153°, towards the East.

PATH OF THE MOON'S SHADOW AND PENUMBRA OVER THE SURFACE OF THE EARTH DURING THE TOTAL SOLAR ECLIPSE OF JULY 7, 1842.



West of 10 Greenwich. 0 East of 10 Greenwich. 20 30 40

IV.—*A Partial Eclipse of the MOON, July 21-22, 1842, invisible at Greenwich.*

First contact with the Penumbra, July	^d 21	^h 20	^m 11·7	} Mean Time at Greenwich.
First contact with the Shadow - - - -	21	21	44·6	
Middle of Eclipse - - - - -	21	22	47·4	
Last contact with the Shadow - - - -	21	23	50·2	
Last contact with the Penumbra - - - -	22	1	23·1	

At these times respectively the Moon will be in the Zenith of the places whose positions are,

Longitude	122	53	W.	} of Greenwich.	Latitude	20	7	S.	
	145	23					19	54	
	160	35					19	44	
	175	47	W.				19	33	
	161	43	E.				19	21	S.

Magnitude of the Eclipse (Moon's diameter = 1) 0·288, on the Southern limb.

Angle from North Pole of { first contact with Shadow 130°, towards the East.
last contact with Shadow 165°, towards the West.

V.—*An Annular Eclipse of the SUN, Dec. 31, 1842, invisible at Greenwich.*

Begins on the Earth generally Dec. 31^d 4^h 9^m·5, Mean Time at Greenwich,
in Longitude 158° 4' W. of Greenwich, and Latitude 15° 0' S.

Central and Annular Eclipse begins generally Dec. 31^d 5^h 13^m·4,
in Longitude 175° 34' W. of Greenwich, and Latitude 18° 17' S.

Central and Annular Eclipse at Noon Dec. 31^d 7^h 0^m·8,
in Longitude 104° 21' W. of Greenwich, and Latitude 33° 18' S.

Central and Annular Eclipse ends generally Dec. 31^d 8^h 55^m·0,
in Longitude 42° 55' W. of Greenwich, and Latitude 0° 3' N.

Ends on the Earth generally Dec. 31^d 9^h 58^m·9,
in Longitude 60° 17' W. of Greenwich, and Latitude 3° 22' N.

The central line passes over the points on the Earth's surface, whose positions are,

Longitude	175	34	} W. of Greenwich.	Latitude	18	17	S.	
	163	49				23	21	
	150	4				28	47	
	135	31				33	8	
	119	30				35	5	
	104	21				33	18	
	88	52				26	58	
	76	46				19	21	
	65	30				11	55	
	53	49				5	9	
	42	55				0		

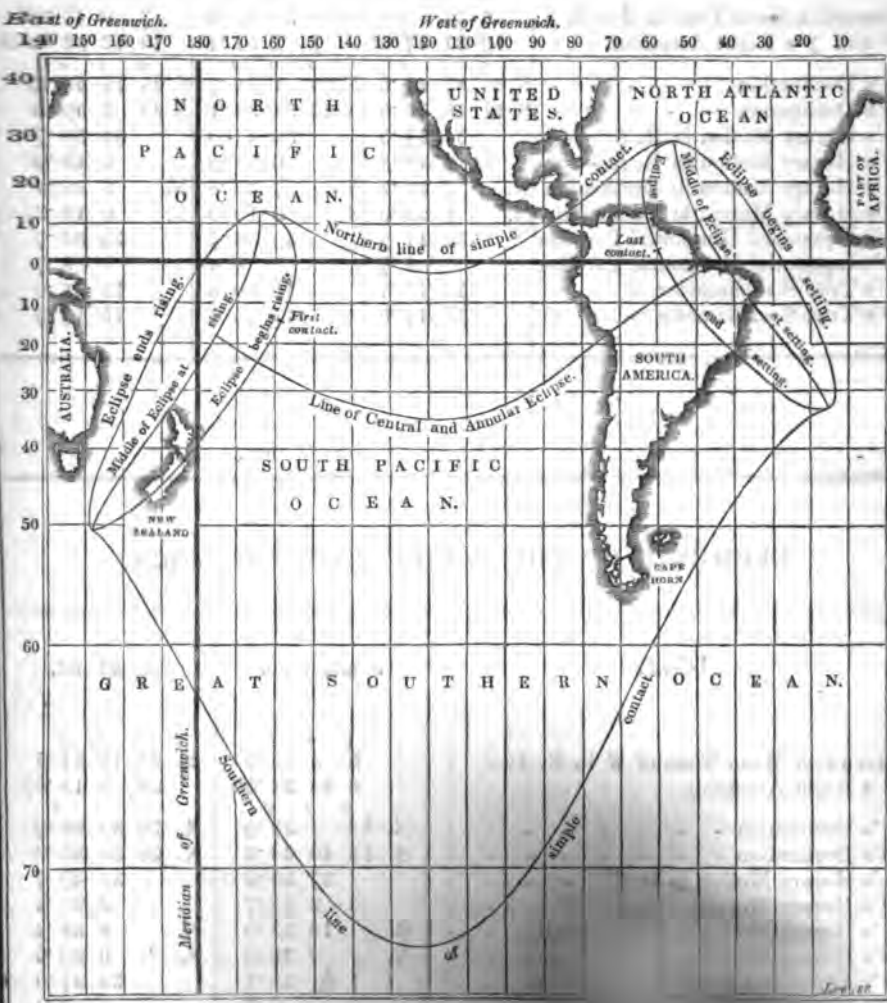
The Northern limit of this Eclipse, or the line traversed by the Northern edge of the Penumbra, passes over the points,

Longitude	164	7	} W. of Greenwich.	Latitude	12	7	N.	
	152	1				6	56	
	140	10				2	9	N.
	119	16				1	10	S.
	116	55				2	19	S.
	101	20				2	33	N.
	90	4				9	44	
	79	56				16	38	
	68	11				23	47	
	55	23				30	17	N.

The Southern limit passes over the points,

Longitude	152	22	E.	} of Greenwich.	Latitude	50	55	S.	
	164	37					56	49	
	177	10	E.				62	7	
	152	0	W.				70	2	
	125	21					72	3	
	110	27					71	44	
	85	26					68	27	
	67	41					62	58	
	61	0					59	49	
	35	43					43	50	
	27	20					38	55	
	17	30	W.			34	10	S.	

PATH OF THE MOON'S PENUMBRA OVER THE SURFACE OF THE EARTH, DURING THE ANNULAR SOLAR ECLIPSE OF DECEMBER 31, 1842.



ELEMENTS OF THE ECLIPSES OF THE SUN.

1842.	January 11.	July 7.	December 31.
Greenwich Mean Time of \odot in R.A.	^h 3 ^m 58 ^s 9.8	^h 18 ^m 54 ^s 46.6	^h 7 ^m 0 ^s 47.8
\odot and J 's Right Ascension - -	19 31 17.26	7 7 51.41	18 42 32.28
J 's Declination - - - - -	S. 22 37 47.6	N. 23 1 38.7	S. 23 15 48.3
\odot 's Declination - - - - -	S. 21 48 10.0	N. 22 32 38.1	S. 23 5 59.5
J 's Horary Motion in R. A. - -	31 27.5	38 47.6	34 59.7
\odot 's Horary Motion in R. A. - -	2 42.8	2 33.9	2 43.9
J 's Horary Motion in Declination	N. 7 18.1	S. 7 32.8	N. 5 22.5
\odot 's Horary Motion in Declination	N. 0 23.6	S. 0 16.6	N. 0 11.2
J 's Equatorial Horizontal Parallax	54 11.9	59 58.7	56 34.7
\odot 's Equatorial Horizontal Parallax	8.7	8.4	8.7
J 's True Semidiameter - - -	14 46.1	16 20.6	15 25.0
\odot 's True Semidiameter - - -	16 17.0	15 45.1	16 17.3

ELEMENTS OF THE ECLIPSES OF THE MOON.

1842.	January 26.	July 21-22.
Greenwich Mean Time of J in R. A. - -	^h 6 ^m 5 ^s 55.3	^d 21 ^h 23 ^m 18 ^s 31.5
J 's Right Ascension - - - - -	8 35 24.62	20 5 15.67
J 's Declination - - - - -	N. 18 1 58.9	S. 19 32 28.9
\odot 's Declination - - - - -	S. 18 40 28.2	N. 20 20 36.0
J 's Horary Motion in R. A. - - -	37 50.6	30 49.7
\odot 's Horary Motion in R. A. - - -	2 35.7	2 29.4
J 's Horary Motion in Declination - -	S. 12 53.9	N. 8 58.4
\odot 's Horary Motion in Declination - -	N. 0 38.0	S. 0 29.6
J 's Equatorial Horizontal Parallax	61 23.1	54 37.8
\odot 's Equatorial Horizontal Parallax	8.7	8.4
J 's True Semidiameter - - - - -	16 43.6	14 53.2
\odot 's True Semidiameter - - - - -	16 15.7	15 46.0

MEAN TIME.

JANUARY.

d	h	m		o	'
2	0	16	♂♂ ε Aquarii	*	1 4 S.
2	9	1	♀ in Aphelion.		
2	12	22	♀♂ ζ - - -	♀	1 15 S.
4	5	49	♀♂ η - - -	♀	1 55 S.
6	18	38	♀□⊙		
7	14	6	♀ in ♂		
8	13	48	♀♂ ζ - - -	♀	0 10 S.
9	20	33	ζ♂♄ - - -	ζ	2 20 N.
9	23	27	♀♂♄ - - -	♀	1 59 N.
9	23	57	η♂♄ - - -	η	2 42 N.
10	4	45	♀♂ η - - -	♀	0 45 S.
10	5	45	♂♂ σ Aquarii	*	0 16 S.
10	19	50	♀♂♄ - - -	♀	0 35 S.
11	-	-	⊙ eclipsed, invis. at Greenw ^h .		
12	7	41	↑♂ψ ² Aquarii	*	0 5 S.
13	4	2	↑♂ψ ³ Aquarii	*	0 33 S.
13	17	29	↑♂ξ Libræ	*	0 4 S.
15	5	9	♂♂♄ - - -	♂	4 34 S.
16	5	8	♀□⊙		
16	10	51	η♂♄ - - -	η	5 28 S.
17	1	9	♀ in Sup. ♂⊙		
17	19	58	♂♂ λ Aquarii	*	0 31 N.
20	19	35	↑♂χ Scorpii	*	1 16 N.
22	19	39	♀ greatest Hel. Lat. S.		
25	9	38	ζ♂ η - - -	η	0 32 N.
25	10	15	♂♂ φ Aquarii	*	0 17 S.
26	-	-	♄ eclipsed, vis. at Greenwich.		
29	21	49	η♂↑ - - -	↑	5 6 S.
31	6	9	♀♂ ν Piscium	*	1 43 N.

FEBRUARY.

d	h	m		o	'
1	1	45	ζ♂ ν ¹ Sagitt.	*	0 3 N.
2	2	38	ζ♂ ν ² Sagitt.	*	0 5 N.
3	18	13	♂♂ η - - -	η	0 5 S.
4	7	46	♀♂ξ ¹ Ceti	*	1 9 N.
5	2	41	ζ♂ξ ² Sagitt.	*	1 37 N.
6	11	50	η♂♄ - - -	η	2 26 N.
6	14	29	ζ♂♄ - - -	ζ	1 46 N.
7	17	9	♂♂↑ - - -	↑	5 56 S.

FEBRUARY.

d	h	m		o	'
8	2	46	η♂ν ¹ Sagitt.	*	0 23 S.
9	12	52	♀♂♄ - - -	♀	2 44 S.
10	8	39	η♂ν ² Sagitt.	*	0 20 S.
10	19	8	♀ in ♀		
10	19	17	♀ in Aphelion.		
11	17	32	♀♂♄ - - -	♀	3 35 S.
12	19	27	η♂♄ - - -	η	5 28 S.
12	21	42	ζ♂♄ Sagitt.	*	0 49 N.
13	9	28	♂♂♄ - - -	♂	5 38 S.
15	6	4	♀ greatest elong.	18	6 E.
15	8	38	♀ in Perihelion.		
17	0	0	η♂ξ ² Sagitt.	*	1 4 N.
17	10	16	♀♂ξ ² Ceti	*	1 8 S.
19	0	0	ζ♂π Sagitt.	*	1 25 N.
21	7	30	♀ Stationary.		
25	16	43	♀ greatest Hel. Lat. N.		
27	4	42	♀□⊙		
28	3	51	♀♂ξ ¹ Ceti	*	0 42 N.

MARCH.

d	h	m		o	'
2	5	17	♀♂μ Ceti	*	1 18 S.
2	8	15	♀♂♀ - - -	♀	5 33 N.
3	1	19	♀ in Inf. ♂⊙		
5	1	26	♀ in Sup. ♂⊙		
5	10	36	♂♂ε Piscium	*	1 29 N.
5	10	44	♀ greatest Hel. Lat. S.		
5	22	49	η♂♄ - - -	η	2 6 N.
6	7	11	ζ♂♄ - - -	ζ	1 10 N.
8	16	0	η♂♄ Sagitt.	*	0 17 N.
9	18	55	↑♂ρ Ophiuchi	*	1 5 S.
10	12	8	♀♂♄ - - -	♀	0 37 S.
11	18	38	♀♂ξ ² Ceti		S.
12	3	4	♀♂♄ - - -		S.
12	4	29	η♂♄ - - -		S.
12	12	3	♀♂η - - -		S.
14	9	48	♂♂♄ - - -		S.
14	18	46	η♂♄⊙		
15	10	34	♀ Station		
18	0	0	♀ in Aph		
20	12	13	⊙ ent. ☉.		

MEAN TIME.

MARCH.

d	h	m		°	'
21	4	46	♂ in ☿		
23	16	2	♀ δ μ Ceti	*	1 40 S.
24	21	48	♂ in ☿		
27	4	13	♂ δ λ Aquarii	*	0 48 N.
29	5	36	♀ δ †		† 9 6 S.
29	10	0	♂ in ♄		
30	7	43	♂ greatest elong.	27	47 W.
30	16	48	♂ δ π Sagitt.	*	0 52 N.
31	8	17	♂ in Aphelion.		

APRIL.

d	h	m		°	'
1	0	0	† Stationary.		
2	9	1	♂ δ ☾		♂ 1 44 N.
2	10	22	† δ ☉		
2	22	11	♂ δ ☾		♂ 0 32 N.
3	19	0	♂ □ ☉		
8	9	30	♂ δ ☾		♂ 7 21 S.
8	14	23	♂ δ ☾		♂ 5 36 S.
10	4	51	♂ δ ♃		♂ 1 58 S.
11	4	30	♂ □ ☉		
11	10	18	♀ δ ☾		♀ 6 5 S.
12	6	38	♂ δ ☾		♂ 4 49 S.
19	0	0	♂ in Aphelion.		
20	18	55	♂ greatest Hel.	Lat. S.	
23	10	18	♂ Stationary.		
29	18	3	♂ δ ☾		♂ 1 26 N.
29	22	17	♂ δ †		♂ 11 21 N.
30	10	21	♂ δ ☾		♂ 0 2 N.
30	17	33	♀ in ♄		

MAY.

d	h	m		°	'
2	5	43	♀ δ ♂		♂ 0 18 N.
2	6	33	♀ δ ♀		♀ 2 48 S.
2	8	0	♂ δ ♀		♀ 3 6 S.
6	0	52	♂ δ ☾		♂ 5 50 S.
9	18	22	♂ in ♄		
10	1	32	♂ δ ☾		♂ 4 36 S.

MAY.

d	h	m		°	'
10	7	8	♂ in Sup. δ ☉		
10	9	2	♂ Stationary.		
11	1	17	♂ δ ☾		♂ 3 27 S.
11	9	55	♀ δ ☾		♀ 3 8 S.
12	17	39	♀ δ ☽		♂ 2 59 S.
14	7	54	♂ in Perihelion.		
16	5	0	♂ δ ♀		♂ 3 25 N.
17	9	36	♂ δ π Sagitt.	*	0 53 N.
19	3	22	♂ δ ♂		♂ 1 0 N.
21	10	35	♂ δ ☽		♂ 4 2 N.
24	13	31	† δ ☉ intens. of light	0.32	
24	16	0	♂ greatest Hel.	Lat. N.	
27	1	9	♂ δ ☾		♂ 1 19 N.
27	18	17	♂ δ ☾		♂ 0 13 S.
28	2	55	♂ δ ☉		

JUNE.

d	h	m		°	'
2	4	22	♂ δ ☽		♂ 2 39 S.
2	11	7	♂ δ ☾		♂ 6 5 S.
3	3	0	♀ in Perihelion.		
4	21	32	♀ δ ε Geminor.	*	0 43 N.
5	3	38	♂ δ ε Geminor.	*	0 9 N.
8	19	3	♂ δ ☾		♂ 1 48 S.
9	19	30	♂ δ ο Sagitt.	*	0 19 N.
10	6	49	♂ δ ☾		♂ 0 38 N.
10	7	59	♀ δ ☾		♀ 0 54 N.
11	10	4	♂ greatest elong.	24	21 E.
11	18	19	♀ δ δ Geminor.	*	1 44 S.
12	21	33	♂ δ δ Geminor.	*	1 4 S.
14	4	39	♂ δ ☉		
16	9	15	♀ δ π Geminor.	*	1 28 N.
17	4	2	♂ in ☿		
19	13	16	♂ □ ☉		
21	9	22	☉ enters ♊. Summer comm		
23	5	56	♂ δ ☾		♂ 1 23 N.
23	21	35	♂ δ ☾		♂ 0 8 S.
24	15	2	♂ Stationary.		
25	5	22	♀ greatest Hel.	Lat. N.	
25	6	59	♂ δ ☉		
27	7	35	♂ in Aphelion.		

MEAN TIME.

JUNE.

d	h	m		o	'
8	0	10	♀ δ γ Cancr	*	1 29 N.
8	7	43	♀ δ δ Cancr	*	1 43 S.
9	20	0	♁ δ ☾ - - -	♁	6 15 S.

JULY.

d	h	m		o	'
2	15	10	♁ δ ♁ Sagitt.	*	1 9 N.
3	1	12	♁ δ ☉		
3	5	0	☉ in Apogee.		
3	13	20	♁ Stationary.		
7	-	-	☉ eclipsed, vis. at Greenwh.		
7	12	43	♁ δ ☾ - - -	♁	0 4 N.
7	19	42	♀ δ ☾ - - -	♀	5 11 S.
8	10	45	♀ in Inf. δ ☉		
0	0	29	♁ δ ☉		
0	6	7	♀ δ ☾ - - -	♀	4 39 N.
0	23	26	♀ δ ♁ - - -	♀	5 50 S.
6	0	6	♀ δ α Leonis	*	1 11 S.
7	18	9	♀ greatest Hel. Lat. S.		
9	5	34	♁ Stationary.		
9	15	53	♁ δ H Geminor.	*	0 9 N.
20	8	56	♁ δ ☾ - - -	♁	1 32 N.
20	21	48	♁ δ ☾ - - -	♁	0 8 N.
21	-	-	☾ eclipsed, invis. at Greenwh.		
21	10	36	♀ δ ρ Leonis	*	1 23 S.
23	0	0	♁ Stationary.		
23	22	12	♀ δ ζ Geminor.	*	1 6 N.
25	17	58	♁ δ η Geminor.	*	0 46 S.
27	2	46	♁ δ ☾ - - -	♁	6 15 S.
28	19	33	♀ δ χ Leonis	*	0 10 N.
29	2	42	♀ δ δ Geminor.	*	1 40 N.
29	3	35	♀ greatest elong.		19 28 W.
30	6	3	♁ δ μ Geminor.	*	0 50 S.
30	9	40	♁ in ☾		

AUGUST.

d	h	m		o	'
1	13	32	♀ δ σ Leonis	*	0 43 N.
3	3	52	♀ δ τ Leonis	*	1 39 S.

AUGUST.

d	h	m		o	'
4	20	49	♀ δ ☾ - - -	♀	0 12 N.
5	6	29	♁ δ ☾ - - -	♁	2 2 N.
5	17	38	♀ in ☾		
7	3	16	♁ δ δ Geminor.	*	0 33 N.
8	12	35	♀ δ β Virginis	*	0 1 N.
9	1	17	♀ δ ☾ - - -	♀	5 59 N.
9	21	59	♀ δ ♁ - - -	♀	0 17 S.
10	7	11	♀ in Perihelion.		
11	3	28	♁ δ ε Geminor.	*	1 39 N.
14	1	12	♁ δ π Sagitt.	*	1 48 N.
15	13	35	♀ δ η Virginis	*	1 10 N.
16	11	49	♁ δ ☾ - - -	♁	1 34 N.
16	22	19	♁ δ ☾ - - -	♁	0 18 N.
20	6	51	♀ in ☽		
20	15	16	♀ greatest Hel. Lat. N.		
20	18	43	♁ ☐ ☉		
23	7	31	♁ δ ☾ - - -	♁	6 8 S.
23	8	9	♀ in Sup. δ ☉		
31	8	28	♀ δ α Virginis	*	1 22 S.

SEPTEMBER.

d	h	m		o	'
1	16	42	♁ δ δ Geminor.	*	1 25 S.
3	0	0	♁ δ ☾ - - -	♁	3 59 N.
4	8	16	♁ δ χ Scorpii	*	2 0 S.
5	9	30	♀ δ ☾ - - -	♀	6 6 N.
7	16	11	♀ δ ☾ - - -	♀	3 56 N.
8	17	43	♁ Stationary.		
10	0	0	♁ in ☾		
11	16	28	♁ Stations		
12	16	39	♁ δ ☾ - - -	♁	
13	2	37	♁ δ ☾ - - -	♁	
13	3	17	♀ in ☽		
14	2	41	♁ ☐ ☉		
16	7	13	♁ δ ⋄		
16	20	10	♁ δ		
19	5	33	♁ δ		
19	11	19	♁ ⋄		
22	0	0	♁		
22	18	35	♀		

MEAN TIME.

SEPTEMBER.

d	h	m		o	i
22	23	26	☉ enters ♌. Autumn comm.		
23	6	50	♄ in Aphelion.		
23	12	0	♀ in Aphelion.		
25	19	23	♃ ♂ ♄ Cancr. * 0 21 S.		
30	18	0	♄ greatest Hel. Lat. N.		

OCTOBER.

d	h	m		o	i
1	5	53	♄ ☐ ☉		
1	16	35	♄ ♂ ☾ - - - ♂ 5 38 N.		
4	6	52	♃ ♂ ♄ Sagitt. * 1 51 N.		
5	13	53	♀ ♂ A' Scorpi. * 1 34 S.		
5	14	37	♄ ♂ ☾ - - - ♄ 2 6 N.		
7	0	23	♀ ♂ ♄ Scorpii * 1 32 N.		
7	4	34	♀ ♂ ☾ - - - ♀ 0 5 N.		
7	7	30	♃ ☐ ☉		
7	18	41	♄ greatest elong. 25 7 E.		
8	11	2	♀ greatest elong. 46 42 E.		
10	1	5	♄ ♂ ☾ - - - ♄ 1 2 N.		
10	5	9	♄ ♂ χ Leonis * 0 4 N.		
10	12	40	♃ ♂ ☾ - - - ♃ 0 14 S.		
12	3	48	♀ ♂ σ Scorpii * 0 12 S.		
13	10	45	♄ ♂ ρ Ophiuchi * 0 29 N.		
13	17	23	♄ greatest Hel. Lat. S.		
14	3	26	♀ ♂ α Scorpii * 0 38 S.		
16	3	34	♀ greatest Hel. Lat. S.		
16	15	39	♄ ♂ ☾ - - - ♄ 6 3 S.		
17	4	30	♄ ♂ σ Leonis * 0 26 N.		
20	2	48	♄ Stationary.		
22	1	51	♀ ♂ ♄ - - - ♄ 15 14 N.		
25	19	49	♀ ♂ A Ophiuchi * 0 56 N.		
27	2	6	♃ ☐ ☉		
30	2	29	♄ ♂ β Virginis * 0 42 S.		
30	7	25	♄ ♂ ☾ - - - ♂ 6 43 N.		
31	6	46	♄ in Inf. ♂ ☉		

NOVEMBER.

d	h	m		o	i
1	15	10	♃ ♂ γ Cancr. * 1 19 S.		
1	16	54	♄ in ♋		

NOVEMBER.

d	h	m		o	i
2	0	10	♄ ♂ ☾ - - - ♄ 5 1		
3	21	15	♄ in Aphelion.		
4	1	55	♀ ♂ ρ Sagitt. * 0 7		
5	10	59	♀ ♂ ☾ - - - ♀ 2 59		
6	6	25	♄ in Perihelion.		
6	13	14	♄ ♂ ☾ - - - ♄ 0 35		
6	20	28	♄ ♂ ♄ Serpentes * 0 7		
7	1	5	♄ ♂ ρ' Sagitt. * 0 10		
7	4	15	♃ ♂ ☾ - - - ♃ 0 51		
9	0	30	♄ Stationary.		
9	9	40	♄ Stationary.		
9	16	22	♄ ♂ ρ' Sagitt. * 0 7		
10	1	43	♀ ♂ γ' Sagitt. * 1 43		
11	7	41	♀ ♂ Sagitt. * 0 39		
12	3	25	♄ ♂ η Virginis * 0 2		
12	17	43	♀ at greatest brilliancy.		
12	21	37	♄ ♂ ☾ - - - ♄ 6 11		
14	16	42	♃ ☐ ☉		
16	14	33	♄ greatest Hel. Lat. N.		
16	15	0	♄ greatest elong. 19 24		
16	18	0	♄ ♂ ξ' Sagitt. * 1 24		
21	21	51	♄ ♂ γ' Virginis * 1 35		
23	1	32	♀ ♂ λ Sagitt. * 1 23		
27	19	53	♄ ♂ ☾ - - - ♂ 7 6		
28	0	17	♀ Stationary.		
30	15	15	♄ ♂ ☾ - - - ♄ 5 4		

DECEMBER.

d	h	m		o	i
2	17	48	♄ ♂ σ Sagitt. * 0 38 N.		
3	11	35	♀ ♂ ☾ - - - ♀ 1 8 S.		
3	23	23	♄ Stationary.		
4	3	48	♄ ♂ ☾ - - - ♄ 0 9 N.		
4	6	43	♃ ♂ η Leonis * 1 54 N.		
4	13	32	♄ ♂ θ Virginis * 0 26 N.		
4	23	39	♃ ♂ ☾ - - - ♃ 1 31 S.		
7	0	0	♄ greatest Hel. Lat. S.		
10	2	33	♄ in ♌		
10	5	30	♄ ♂ ☾ - - - ♄ 6 21 S.		
11	10	17	♀ in ♌		
12	4	48	♀ Stationary.		

MEAN TIME.

DECEMBER.				DECEMBER.			
d	h	m	° ' "	d	h	m	° ' "
12	5	5	♀ δ ♯ - - - ♯ 9 31 N.	27	17	28	♃ δ ♯ - - - ♃ 11 15 S.
16	6	41	♃ □ ☉ - - - ♃ 12 15 S.	28	0	13	♃ in Sup. δ ☉
18	10	38	♯ δ ☉, intens. of light 2 29 2	28	6	56	♯ δ ☉
18	15	45	♀ in Inf. δ ☉	29	0	0	☐ Stationary.
20	6	5	♃ in Aphelion.	29	21	31	♀ δ ☉ - - - ♀ 6 8 N.
21	3	26	♃ δ ♀ - - - ♃ 3 39 S.	31	-	-	☉ eclips. invis. at Greenwich.
21	16	55	☉ enters ♄, Winter comm.	31	11	31	♃ δ ☉ - - - ♃ 1 59 S.
26	5	53	♃ δ ☉ - - - ♃ 6 43 N.	31	18	41	♃ δ ☉ - - - ♃ 0 12 S.

ELEMENTS FOR DETERMINING THE GEOCENTRIC POSITION,
MAGNITUDE, AND APPEARANCE OF SATURN'S RING.

Mean Noon.	p	a	b	l	l'
Jan. 1	+ 7° 2' 5"	33° 93'	+ 14° 84'	+ 25° 56' 2"	+ 25° 57' 0"
Feb. 10	7 17 2	34 74	14 76	25 8 7	25 47 8
Mar. 22	7 25 2	36 66	15 20	24 29 7	25 37 8
May 1	7 27 1	39 14	16 12	24 19 3	25 27 3
June 10	7 23 4	41 09	17 18	24 43 1	25 15 8
July 20	7 15 9	41 26	17 68	25 22 3	25 3 8
Aug. 29	7 10 0	39 53	17 22	25 49 0	24 51 0
Oct. 8	7 11 7	37 05	16 14	25 49 1	24 37 5
Nov. 17	7 20 4	35 01	14 98	25 19 9	24 23 4
Dec. 27	7 30 6	34 04	14 07	24 24 6	24 8 6
— 31	+ 7 31 5	34 01	+ 13 99	+ 24 17 9	+ 24 7 2

p denotes the inclination of the Northern semi-minor axis of the Ring to the circle of Declination; + East, — West.

a the *major* axis of the Ring.

b the *minor* axis; + North surface visible,
— South surface visible.

l the elevation of the Earth above the plane of the Ring, as seen from Saturn; + North, — South.

l' the elevation of the Sun above the plane of the Ring, as seen from Saturn;
+ North, — South.

TABLE,

SHOWING THE MEAN TIME OF THE GREATEST LIBRATION OF THE MOON'S APPARENT DISC.

	d	h	m	
Jan.	4	16	43	N. W.
	20	15	58	N. E.
Feb.	1	18	24	N. W.
	17	22	46	N. E.
Mar.	2	2	4	N. W.
	17	20	46	N. E.
	30	8	9	N. W.
Apr.	13	18	45	N. E.
	27	7	15	N. W.
May	10	2	2	N. E.
	24	17	8	N. W.
June	6	5	57	N. E.
	20	6	15	N. W.
July	4	0	37	N. E.
	16	19	28	N. W.
Aug.	1	2	55	N. E.
	13	9	38	N. W.
	29	8	12	N. E.
Sept.	10	11	47	N. W.
	26	11	32	S. E.
Oct.	8	17	16	S. W.
	24	2	44	S. E.
Nov.	5	20	54	S. W.
	19	11	16	S. E.
Dec.	3	16	34	S. W.
	16	1	34	N. E.
	30	17	20	S. W.

The Moon's Libration is here supposed to take place in the plane of her Orbit:—and by the time of the greatest Libration of her Apparent Disc is to be understood the instant at which, to an observer at the centre of the Earth, the variation of the Disc from its mean state has attained its maximum.

The right-hand column indicates the quadrant of the Moon's Disc in which the Libration takes place, and in which the greatest change of the Moon's surface will become visible.

TABLE,

SHOWING THE ILLUMINATED PORTION OF THE DISCS OF VENUS AND MARS.

1842.	VENUS.	MARS.
Jan. 15	0·980	0·941
Feb. 14	0·997	0·960
Mar. 15	0·999	0·975
Apr. 15	0·984	0·987
May 15	0·950	0·996
June 15	0·891	1·000
July 15	0·813	0·999
Aug. 15	0·716	0·993
Sept. 15	0·599	0·982
Oct. 15	0·455	0·967
Nov. 15	0·240	0·948
Dec. 15	0·005	0·928

The numbers given in this Table represent the versed sines of the illuminated portion of the Discs, the apparent Diameters of the Planets being considered as *unity*.

MEAN TIME OF HIGH WATER AT LONDON BRIDGE,

Reckoning from Noon of each Day.

Day of the Month.	JANUARY.				FEBRUARY.				MARCH.				APRIL.				MAY.				JUNE.							
	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m
1	5	11	17	34	6	6	18	27	5	0	17	19	6	2	18	26	6	25	18	48	7	36	19	5				
2	5	55	18	17	6	51	19	15	5	40	18	1	6	49	19	18	7	20	19	52	8	27	20	5				
3	6	43	19	5	7	40	20	13	6	25	18	47	7	50	20	28	8	26	21	2	9	27	21	5				
4	7	26	19	48	8	53	21	37	7	12	19	43	9	12	21	56	9	36	22	10	10	28	22	3				
5	8	17	20	53	10	22	23	7	8	21	21	7	10	36	23	13	10	42	23	13	11	28	23	5				
6	9	34	22	16	11	49	—	—	9	52	22	34	11	47	—	—	11	39	—	—	—	—	12	2				
7	11	1	23	49	0	23	12	51	11	14	23	59	0	11	12	36	0	5	12	27	0	45	13	1				
8	—	12	15	—	1	14	13	35	—	12	24	—	0	59	13	14	0	43	13	3	1	33	13	5				
9	0	44	13	8	1	55	14	14	0	52	13	12	1	29	13	46	1	21	13	37	2	20	14	4				
10	1	32	13	51	2	32	14	48	1	32	13	48	2	0	14	14	1	57	14	18	3	4	15	2				
11	2	10	14	39	3	3	15	19	2	5	14	21	2	30	14	45	2	36	14	57	3	48	16	1				
12	2	49	15	7	3	31	15	41	2	36	14	49	3	1	15	17	3	15	15	34	4	35	16	5				
13	3	21	15	39	3	57	16	12	3	3	15	14	3	33	15	54	3	57	16	20	5	21	17	4				
14	3	54	16	9	4	25	16	41	3	31	15	44	4	12	16	33	4	41	17	4	6	11	18	4				
15	4	25	16	42	4	55	17	10	4	0	16	14	4	49	17	10	5	26	17	53	7	7	19	3				
16	4	57	17	14	5	24	17	42	4	32	16	49	5	32	17	57	6	22	18	52	7	59	20	2				
17	5	28	17	46	6	1	18	25	5	6	17	25	6	25	18	52	7	21	19	56	9	0	21	3				
18	6	3	18	22	6	50	19	15	5	45	18	7	7	26	20	5	8	31	21	9	10	9	22	4				
19	6	40	18	57	7	43	20	23	6	32	18	59	8	52	21	35	9	45	22	20	11	27	—					
20	7	18	19	44	9	0	21	54	7	30	20	11	10	13	22	49	10	55	23	24	0	3	19	3				
21	8	16	20	54	10	40	23	24	8	59	21	48	11	25	23	54	11	52	—	—	1	6	13	2				
22	9	37	22	28	—	12	2	—	10	34	23	16	—	12	18	—	0	16	12	46	1	48	14	1				
23	11	0	23	45	0	34	13	7	11	52	—	—	0	45	13	11	1	11	13	36	2	32	14	5				
24	—	12	19	—	1	34	13	58	0	22	12	47	1	33	13	56	2	0	14	22	3	12	15	3				
25	0	50	13	18	2	19	14	41	1	13	13	34	2	18	14	36	2	43	15	2	3	47	16					
26	1	47	14	14	3	1	15	23	1	55	14	17	2	58	15	20	3	22	15	42	4	23	16	3				
27	2	37	15	1	3	42	16	2	2	40	14	59	3	41	16	1	4	1	16	20	4	58	17	1				
28	3	24	15	44	4	24	16	42	3	19	15	39	4	23	16	41	4	39	16	57	5	32	17	5				
29	4	4	16	28	—	—	—	—	4	1	16	21	5	0	17	19	5	17	17	39	6	9	18	2				
30	4	48	17	8	—	—	—	—	4	42	17	0	5	39	18	2	6	2	18	22	6	48	19	0				
31	5	28	17	49	—	—	—	—	5	20	17	41	—	—	—	—	6	48	19	9	—	—	—	—				

If the time of High Water be required, according to the *civil* mode of reckoning:

1. *For the Morning Tide*:—With the day of the month *preceding* the given date, take the time opposite thereto from the 2nd column of the month, and diminish it by 12 hours.

2. *For the Afternoon Tide*:—With the given date, take the time opposite thereto from the 1st column of the month.

MEAN TIME OF HIGH WATER AT LONDON BRIDGE,

Reckoning from Noon of each Day.

Day of the Month.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.													
	h	m	h	m	h	m	h	m	h	m	h	m	h	m										
1	7	26	19	49	8	30	21	11	10	59	23	39	11	52	—	0	41	13	5	1	11	13	38	
2	8	13	20	41	9	53	22	39	—	12	11	—	0	20	12	49	1	30	13	54	2	3	14	25
3	9	17	21	55	11	19	23	55	0	42	13	9	1	9	13	33	2	16	14	39	2	46	15	7
4	10	34	23	10	—	12	26	1	34	13	58	1	55	14	15	—	3	0	15	20	3	28	15	48
5	11	44	—	—	0	56	13	23	2	21	14	42	2	34	14	58	3	41	16	3	4	9	16	27
6	0	16	12	46	1	52	14	17	3	1	15	23	3	17	15	37	4	24	16	45	4	46	17	7
7	1	14	13	41	2	39	15	3	3	40	16	1	3	58	16	20	5	5	17	26	5	26	17	44
8	2	6	14	30	3	24	15	43	4	20	16	40	4	40	17	2	5	49	18	15	6	6	18	31
9	2	53	15	18	4	6	16	24	5	1	17	23	5	24	17	47	6	37	19	7	6	56	19	16
10	3	39	16	1	4	44	17	4	5	45	18	8	6	10	18	34	7	37	20	9	7	40	20	6
11	4	24	16	46	5	25	17	46	6	33	18	57	7	0	19	32	8	45	21	20	8	33	21	3
12	5	7	17	29	6	8	18	32	7	28	20	7	8	13	20	58	9	52	22	24	9	34	22	5
13	5	52	18	14	6	56	19	21	8	50	21	35	9	44	22	22	10	55	23	26	10	36	23	8
14	6	38	19	0	7	53	20	31	10	18	23	3	10	58	23	30	11	50	—	—	11	39	—	—
15	7	20	19	46	9	15	22	1	11	40	—	—	11	58	—	—	0	13	12	32	0	8	12	35
16	8	18	20	55	10	48	23	31	0	11	12	40	0	26	12	44	0	49	13	10	0	59	13	20
17	9	37	22	21	—	12	7	—	1	0	13	18	0	59	13	15	1	27	13	44	1	41	14	5
18	11	4	23	43	0	37	13	0	1	36	13	56	1	34	13	51	2	4	14	22	2	27	14	47
19	—	12	17	—	1	22	13	45	2	12	14	26	2	6	14	19	2	42	15	0	3	8	15	30
20	0	48	13	14	2	3	14	20	2	40	14	50	2	33	14	48	3	18	15	38	3	51	16	12
21	1	38	14	0	2	38	14	53	3	4	15	15	3	4	15	18	3	59	16	20	4	34	16	55
22	2	23	14	41	3	7	15	20	3	31	15	43	3	35	15	52	4	41	17	3	5	19	17	38
23	2	57	15	13	3	34	15	48	3	56	16	12	4	11	16	30	5	26	17	55	6	5	18	30
24	3	29	15	45	4	2	16	13	4	28	16	48	4	50	17	12	6	22	18	50	6	56	19	20
25	3	59	16	15	4	28	16	43	5	7	17	26	5	32	17	57	7	19	19	51	7	44	20	14
26	4	30	16	46	4	56	17	12	5	48	18	11	6	25	18	54	8	25	21	1	8	48	21	25
27	5	1	17	15	5	29	17	50	6	38	19	7	7	30	20	43	9	36	22	11	10	6	22	48
28	5	32	17	49	6	10	18	33	7	39	20	24	8	—	—	—	23	16	—	—	11	27	—	—
29	6	6	18	24	6	57	19	27	9	14	21	59	10	—	—	—	—	—	—	—	0	1	12	35
30	6	41	19	0	8	4	20	46	10	43	23	21	11	—	—	—	2	43	—	—	1	2	13	28
31	7	26	19	55	9	34	22	19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Example:— Required the Mean Time of High Water Morning and Afternoon of Jan. 20, 1842.

1. Opposite the day *preceding*, viz 18th 57^m, which, being diminished by 12 in the Morning.

2. Opposite the given date, and

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TIME OF HIGH WATER, ON THE FULL AND CHANGE OF THE MOON,
AT THE UNDERMENTIONED PORTS AND PLACES.

PLACE.	SITUATION.	Time of High Water.		PLACE.	SITUATION.	Time of High Water.	
		h	m			h	m
Aberdeen Bar	Scotland	1	11	Carlingford Bar	Ireland	10	44
Aberdovy	Wales	7	30	Carnarvon Bar	Wales	9	20
Aberystwith	Wales	7	30	Chatham	England	0	54
Achill Head	Ireland	6	0	Cherbourg	France	7	35
Agnes (St.)	Scilly Isles	4	32	Chester Bar	England	10	30
Air Point	Isle of Man	11	7	Chichester Harbour	England	11	30
Aldborough	England	10	45	Christchurch Harbour	England	8	50
Alderney Pier	English Channel	6	45	Clear Cape	Ireland	4	0
Alne River	England	2	45	Cork Harbour	Ireland	4	30
Amlwick Port	Anglesea	10	30	Cornwall Cape	England	4	30
Antwerp	Netherlands	4	25	Cowes	Isle of Wight	10	45
Arran Isle	Scotland	11	15	Cromartie	Scotland	11	45
Arundel Bar	England	11	15	Cuckold's Point	River Thames	2	1
Balta	Shetland	9	45	Cuxhaven	Germany	1	0
Baltimore	Ireland	3	45	Dartmouth Harbour	England	6	5
Banff	Scotland	0	41	Deal	England	11	25
Bantry Bay	Ireland	3	46	Dingle Bay	Ireland	3	30
Bardsey Island	Wales	8	0	Donaghadee Pier	Ireland	9	15
Barmouth	Wales	7	55	Donegal Bar	Ireland	5	5
Barnstaple Bar	England	5	30	Douglas's Harbour	Isle of Man	11	12
Beachy (on Shore)	England	10	15	Dover Pier	England	11	15
Beachy (Offing)	England	11	0	Downing's Bay	Ireland	5	20
Beaumaris	Wales	10	26	Sheephaven			
Belfast	Ireland	10	5	Downs Stream	England	2	55
Berwick	England	2	18	Dublin Bar	Ireland	10	30
Blakeney Harbour	England	6	50	Dudgeon Lights	North Sea	7	30
Blythe	England	2	45	Dunbar	Scotland	2	20
Bolt Head	England	5	45	Duncansby Head	Scotland	8	15
Boston	England	7	15	Dundalk Bar	Ireland	11	0
Boulogne	France	10	50	Dundee	Scotland	2	22
Brassa Sound	Shetland	10	0	Dungarvon	Ireland	4	30
Bree Bank	North Sea	3	30	Dungeness	England	10	50
Brest Harbour	France	3	48	Dunkerque	France	11	40
Bridgewater	England	6	45	Eddystone	English Chan.	5	15
Bridlington	England	4	30	Exmouth Bar	England	6	25
Bridport	England	6	0	Eyemouth	Scotland	2	15
Brighton	England	10	5	Falmouth	England	5	15
Brielle	Netherlands	3	0	Flamboro' Head	England	4	30
Bristol	England	7	16	Flatholm	England	6	37
Brouwershaven	Netherlands	2	0	Flushing	Netherlands	1	20
Buchan Ness	Scotland	12	0	Foreland (North)	England	11	45
Burnt Island	Scotland	2	30	Foreland (South)	England	11	20
Cairston	Orkneys	9	0	Fowey	England	5	30
Calais	France	11	30	Galloway (Mull)	Scotland	11	15
Caldy Island	Coast of Wales	6	0	Galway Bay	Ireland	4	30
Calf of Man	St. Geo. Channel	11	5	Goeree (West Gat.)	Holland	1	45
Cancalle Bay	France	6	0	Goodwyn (Back of)	Downs	2	55
Cantire (Mull)	Scotland	9	0	Gravelines	France	11	40
Cardigan Bar	Wales	7	0	Gravesend	England	1	30
Caermarthen Bar	Wales	6	10				

TIME OF HIGH WATER, ON THE FULL AND CHANGE OF THE MOON, AT THE UNDERMENTIONED PORTS AND PLACES.

PLACE.	SITUATION.	Time of High Water.	PLACE.	SITUATION.	Time of High Water.
		h m			h m
Greenock - -	W. C. of Scotland	11 45	Portland Race - -	England - -	9 15
Guernsey Pier - -	English Channel	6 30	Portland Road - -	England - -	6 15
Gunfleet - -	River Thames	- 12 0	Port Patrick - -	Scotland - -	- 11 0
Hartlepool - -	England - -	- 3 45	Portsmouth Dock Yd.	England - -	- 11 40
Harwich - -	England - -	- 11 30	Rathlin I., Church Bay	N. C. of Irel.	9 0
Hastings - -	England - -	- 10 36	Ramsgate Harbour	England - -	- 11 46
Havre de Grace	France - -	- 10 30	Rye Harbour - -	England - -	- 10 40
Helen's (St.)	England - -	- 11 0	Salcombe - -	England - -	- 5 50
Heligoland - -	German Ocean	- 11 0	Saltees - -	Ireland - -	- 5 40
Hellevoetsluis	Holland - -	- 2 0	Scalloway - -	Shetland - -	- 9 45
Hollesley Bay -	England - -	- 11 30	Scarborough - -	England - -	- 4 25
Holyhead Bay -	Wales - -	- 10 0	Scilly Islands - -	England - -	- 4 32
Horn Point - -	Jutland - -	- 12 0	Seaford - -	England - -	- 10 15
Howth Harbour	Ireland - -	- 11 8	Selsea Harbour - -	England - -	- 11 15
Hull - -	England - -	- 6 0	Shannon Mouth - -	Ireland - -	- 3 50
Ipswich - -	England - -	- 12 0	Sheerness Dock Yard	England - -	- 0 39
Isle de Bas - -	France - -	- 3 17	Shields - -	England - -	- 3 0
Jersey (St. Aubin's)	English Channel	6 10	Shoreham Harbour	England - -	- 11 15
Kenmare River	Ireland - -	- 3 30	Skerries - -	Ireland - -	- 4 45
King's Road - -	Bristol Channel	- 6 45	Sligo Bay - -	Ireland - -	- 6 45
Kinsale Harbour	Ireland - -	- 4 30	Solebay - -	England - -	- 10 30
Kirkcudbright -	Scotland - -	- 11 15	Southampton - -	England - -	- 11 40
Land's End - -	England - -	- 4 30	Spithead - -	England - -	- 9 30
Leith Pier - -	Scotland - -	- 2 22	Spurn Point - -	England - -	- 5 20
Lerwick Harbour	Shetland - -	- 10 30	St. Ives - -	England - -	- 4 30
Lewis Islands -	Scotland - -	- 6 0	St. Malo - -	France - -	- 6 0
Liverpool Dock	England - -	- 11 23	Stromness - -	Orkneys - -	- 9 0
London Bridge -	River Thames	- 2 7	Sunderland - -	England - -	- 3 0
Margate Pier - -	England - -	- 11 15	Swansea Bay - -	Wales - -	- 5 56
Milford Haven Ent.	Wales - -	- 5 45	Tay Bar - -	Scotland - -	- 1 45
Minehead Pier -	England - -	- 6 30	Tees River Bar - -	England - -	- 3 30
Montrose - -	Scotland - -	- 1 45	Terschelling, West	Holland - -	- 8 40
Morlaix - -	N. C. of France	5 15	Texel, Helder Road } E. Stream }	Holland - -	- 9 0
Mount's Bay - -	England - -	- 4 40	Torbay - -	England - -	- 6 5
Needles Point -	Isle of Wight	- 9 45	Tralee Bay - -	Ireland - -	- 3 45
Newcastle - -	England - -	- 4 0	Tynemouth Bar - -	England - -	- 2 50
Newport - -	Wales - -	- 6 45	Waterford Harbour	Ireland - -	- 5 50
Nieuport - -	France - -	- 11 45	Wexford Harbour -	Ireland - -	- 7 30
Nore Light - -	River Thames	- 1 9	Weymouth - -	England - -	- 6 30
Orfordness - -	England - -	- 10 40	Whithy - -	England - -	- 3 15
Orkney Isles - -	Scotland - -	- 10 30	Wicklow - -	Ireland - -	- 0 0
Ostend - -	Flanders - -	- 0 10	Wisbech - -	England - -	- 3 30
Pembroke Dock Yd.	Wales - -	- 6 4	Wray - -	England - -	- 0 0
Pentland Frith -	Scotland - -	- 10 30	Ya - -	England - -	- 0 0
Penzance - -	England - -	- 4 30	Ya - -	England - -	- 0 0
Peterhead - -	Scotland - -	- 0 45	Ya - -	England - -	- 0 0
Plymouth Dock Yard	England - -	- 5 33	Ya - -	England - -	- 0 0

TABLE, SHOWING THE CORRECTION REQUIRED ON ACCOUNT OF SECOND DIFFERENCES,

In finding the Greenwich Time corresponding to a reduced Lunar Distance.

*Arguments:—*Approximate Interval and Difference of Proportional Logarithms.

Approximate Interval.		Difference of the Proportional Logarithms in the Ephemeris.																												
h	m	h	m	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	
0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	10	2	50	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2
0	20	2	40	0	1	1	1	1	1	2	2	2	2	2	3	3	3	3	4	4	4	4	4	4	5	5	5	5	6	6
0	30	2	30	0	1	1	2	2	2	2	3	3	3	4	4	5	5	5	6	6	6	6	7	7	7	8	8	8	9	9
0	40	2	20	0	1	1	2	2	3	3	3	4	4	5	5	6	6	6	7	7	8	8	9	9	10	10	10	11	11	
0	50	2	10	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	
1	0	2	0	1	1	2	2	3	3	4	4	5	6	6	7	7	8	8	9	9	10	10	11	12	12	13	13	14	14	
1	10	1	50	1	1	2	2	3	4	4	5	5	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	15	
1	20	1	40	1	1	2	3	3	4	4	5	6	6	7	7	8	9	9	10	10	11	12	12	13	14	14	15	16	16	
1	30	1	30	1	1	2	3	3	4	4	5	6	6	7	8	8	9	9	10	11	11	12	13	14	14	15	16	16	17	

Approximate Interval.		Difference of the Proportional Logarithms in the Ephemeris.																											
h	m	h	m	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	
0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	10	2	50	4	4	4	4	4	4	4	4	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	7	7	
0	20	2	40	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	
0	30	2	30	9	10	10	10	11	11	12	12	12	13	13	13	14	14	14	14	15	15	16	16	16	17	17	17	18	
0	40	2	20	12	12	13	13	13	14	14	15	15	16	16	16	17	17	18	18	19	19	19	20	20	21	21	22	22	
0	50	2	10	14	14	15	15	16	16	16	17	17	18	19	19	20	20	21	21	22	22	22	23	23	24	24	25	26	
1	0	2	0	15	16	16	17	17	18	18	19	19	20	21	21	22	22	23	23	24	24	25	25	26	27	27	28	28	
1	10	1	50	16	17	17	18	18	19	20	21	21	22	22	23	24	24	25	25	26	27	27	28	28	29	30	30		
1	20	1	40	17	17	18	19	20	20	21	21	22	23	23	24	25	25	26	26	27	28	28	29	29	30	31	31		
1	30	1	30	17	18	18	19	20	21	21	22	23	23	24	24	25	25	26	27	27	28	29	29	30	31	31	32		

Approximate Interval.		Difference of the Proportional Logarithms in the Ephemeris.																			
h	m	h	m	104	106	108	110	112	114	116	118	120	122	124	126	128	130	132	134	136	138
0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	10	2	50	7	7	7	7	7	7	8	8	8	8	8	8	8	8	9	9	9	9
0	20	2	40	13	13	13	14	14	14	14	15	15	15	15	15	16	16	16	16	17	17
0	30	2	30	18	18	19	19	19	20	20	20	21	21	21	22	22	22	23	23	24	24
0	40	2	20	22	23	23	24	24	25	25	25	26	26	27	27	28	28	28	29	29	30
0	50	2	10	26	26	27	27	28	29	29	29	30	30	31	31	32	32	33	33	34	34
1	0	2	0	29	29	30	30	31	31	32	33	33	34	34	35	35	36	37	37	38	38
1	10	1	50	31	31	32	32	33	34	34	35	35	36	37	37	38	38	39	40	40	41
1	20	1	40	32	33	33	34	34	35	35	36	37	38	38	39	39	40	41	41	42	42
1	30	1	30	32	33	34	34	35	35	36	36	37	38	39	39	40	40	41	42	42	43

The Correction is to be added to the approximate Greenwich Time when the Proportional Logarithms in the Ephemeris are decreasing, and subtracted when they are increasing.

TABLES FOR DETERMINING THE LATITUDE BY OBSERVATIONS OF THE POLE STAR OUT OF THE MERIDIAN.

TABLE I.

Containing the *First* Correction.

Argument:—Sidereal Time of Observation.

Sidereal Time.	Correction.	Sidereal Time.	Sidereal Time.	Correction.	Sidereal Time.
h m	° ' " +	h m	h m	° ' " +	h m
0 0	1 28 14	12 0	6 0	0 24 53	18 0
10	1 29 14	10	10	0 21 1	10
20	1 30 3	20	20	0 17 6	20
30	1 30 43	30	30	0 13 9	30
40	1 31 12	40	40	0 9 11	40
50	1 31 31	50	50	0 5 12	50
1 0	1 31 40	13 0	7 0	0 1 12	19 0
10	1 31 37	10	10	0 2 48	10
20	1 31 25	20	20	0 6 48	20
30	1 31 2	30	30	0 10 46	30
40	1 30 29	40	40	0 14 44	40
50	1 29 45	50	50	0 18 40	50
2 0	1 28 51	14 0	8 0	0 22 34	20 0
10	1 27 47	10	10	0 26 25	10
20	1 26 32	20	20	0 30 13	20
30	1 25 8	30	30	0 33 58	30
40	1 23 35	40	40	0 37 39	40
50	1 21 51	50	50	0 41 16	50
3 0	1 19 59	15 0	9 0	0 44 47	21 0
10	1 17 58	10	10	0 48 14	10
20	1 15 46	20	20	0 51 35	20
30	1 13 27	30	30	0 54 51	30
40	1 10 59	40	40	0 58 0	40
50	1 8 23	50	50	1 1 2	50
4 0	1 5 40	16 0	10 0	1 3 58	22 0
10	1 2 49	10	10	1 6 46	10
20	0 59 50	20	20	9 27	20
30	0 56 45	30	30	59	30
40	0 53 33	40	40		40
50	0 50 16	50	50		50
5 0	0 46 52	17 0			
10	0 43 23	10			
20	0 39 49	20			
30	0 36 11	30			
40	0 32 29	40			
50	0 28 42	50			
6 0	0 24 53	18 0			

TABLE II.

Containing the *Second Correction*. (*always to be added*.)

Arguments:—Sidereal Time and Approximate Latitude.

Sidereal Time.	Approximate Latitude.								Sidereal Time.
	0°	5°	10°	15°	20°	25°	30°	35°	
h m	' "	' "	' "	' "	' "	' "	' "	' "	h m
0 0	0 0	0 0	0 1	0 1	0 2	0 3	0 3	0 4	0 0
30	0 0	0 0	0 0	0 0	0 0	0 1	0 1	0 1	30
1 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 0
30	0 0	0 0	0 0	0 0	0 0	0 0	0 1	0 1	30
2 0	0 0	0 0	0 1	0 1	0 2	0 2	0 3	0 3	2 0
30	0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	30
3 0	0 0	0 2	0 3	0 5	0 6	0 8	0 10	0 12	3 0
30	0 0	0 2	0 5	0 7	0 9	0 12	0 15	0 18	30
4 0	0 0	0 3	0 6	0 9	0 13	0 17	0 21	0 25	4 0
30	0 0	0 4	0 8	0 12	0 16	0 21	0 26	0 32	30
5 0	0 0	0 5	0 10	0 15	0 20	0 25	0 31	0 38	5 0
30	0 0	0 5	0 11	0 17	0 23	0 29	0 36	0 43	30
6 0	0 0	0 6	0 12	0 18	0 25	0 32	0 39	0 48	6 0
30	0 0	0 6	0 13	0 19	0 26	0 34	0 41	0 50	30
7 0	0 0	0 6	0 13	0 20	0 27	0 34	0 42	0 51	7 0
30	0 0	0 6	0 13	0 19	0 26	0 34	0 42	0 51	30
8 0	0 0	0 6	0 12	0 18	0 25	0 32	0 40	0 48	8 0
30	0 0	0 6	0 11	0 17	0 23	0 30	0 37	0 44	30
9 0	0 0	0 5	0 10	0 15	0 20	0 26	0 32	0 39	9 0
30	0 0	0 4	0 9	0 13	0 17	0 22	0 27	0 33	30
10 0	0 0	0 3	0 7	0 10	0 14	0 18	0 22	0 26	10 0
30	0 0	0 2	0 5	0 8	0 10	0 13	0 16	0 19	30
11 0	0 0	0 2	0 3	0 5	0 7	0 9	0 11	0 13	11 0
30	0 0	0 1	0 2	0 3	0 4	0 5	0 7	0 8	30
12 0	0 0	0 0	0 1	0 1	0 2	0 3	0 3	0 4	12 0

TABLE III. (*for 1842*.)

Containing the *Third Correction*. (*always to be added*.)

Arguments:—Sidereal Time and Date.

Sidereal Time.	Jan. 1.	Feb. 1.	March 1.	April 1.	May 1.	June 1.	July 1.
h	' "	' "	' "	' "	' "	' "	' "
0	1 6	1 3	0 56	0 46	0 38	0 35	0 36
2	1 9	1 11	1 8	1 0	0 50	0 43	0 39
4	1 10	1 17	1 18	1 13	1 5	0 55	0 48
6	1 9	1 18	1 23	1 23	1 18	1 9	1 0
8	1 5	1 14	1 22	1 27	1 26	1 21	1 12
10	0 59	1 6	1 15	1 23	1 28	1 27	1 20
12	0 54	0 57	1 4	1 14	1 22	1 25	1 24
14	0 51	0 49	0 52	1 0	1 10	1 17	1 21
16	0 50	0 43	0 42	0 47	0 55	1 5	1 12
18	0 51	0 42	0 37	0 37	0 42	0 51	1 0
20	0 55	0 46	0 38	0 33	0 34	0 39	0 48
22	1 1	0 54	0 45	0 37	0 32	0 33	0 40
24	1 6	1 3	0 56	0 46	0 38	0 35	0 36

TABLE II.

Containing the *Second Correction.* (*always to be added.*)
Arguments:—Sidereal Time and Approximate Latitude.

Sidereal Time.	Approximate Latitude.								Sidereal Time.
	35°	40°	45°	50°	55°	60°	65°	70°	
h m	' "	' "	' "	' "	' "	' "	' "	' "	h m
0 0	0 4	0 5	0 5	0 6	0 8	0 9	0 12	0 15	0 0
30	0 1	0 1	0 2	0 2	0 2	0 3	0 3	0 4	30
1 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 0
30	0 1	0 1	0 1	0 1	0 1	0 2	0 2	0 3	30
2 0	0 3	0 4	0 4	0 5	0 6	0 8	0 10	0 12	2 0
30	0 7	0 9	0 10	0 12	0 14	0 17	0 22	0 28	30
3 0	0 12	0 15	0 17	0 21	0 25	0 30	0 38	0 48	3 0
30	0 18	0 22	0 26	0 31	0 37	0 45	0 56	1 12	30
4 0	0 25	0 30	0 36	0 43	0 51	1 2	1 17	1 38	4 0
30	0 32	0 38	0 45	0 54	1 5	1 18	1 37	2 4	30
5 0	0 38	0 46	0 54	1 5	1 17	1 34	1 56	2 29	5 0
30	0 43	0 52	1 2	1 14	1 28	1 47	2 13	2 50	30
6 0	0 48	0 57	1 8	1 21	1 37	1 58	2 26	3 7	6 0
30	0 50	1 0	1 12	1 26	1 43	2 4	2 34	3 17	30
7 0	0 51	1 2	1 13	1 27	1 45	2 7	2 37	3 21	7 0
30	0 51	1 1	1 12	1 26	1 43	2 5	2 35	3 19	30
8 0	0 48	0 58	1 9	1 22	1 38	1 59	2 28	3 9	8 0
30	0 44	0 53	1 3	1 15	1 30	1 50	2 16	2 54	30
9 0	0 39	0 47	0 56	1 7	1 20	1 37	2 0	2 33	9 0
30	0 33	0 40	0 47	0 56	1 7	1 22	1 41	2 9	30
10 0	0 26	0 32	0 38	0 45	0 54	1 5	1 21	1 43	10 0
30	0 19	0 24	0 28	0 34	0 40	0 49	1 0	1 17	30
11 0	0 13	0 16	0 19	0 23	0 27	0 33	0 41	0 53	11 0
30	0 8	0 10	0 11	0 14	0 16	0 20	0 25	0 31	30
12 0	0 4	0 4	0 5	0 6	0 8	0 9	0 12	0 15	12 0

TABLE III. (*for 1842.*)

Containing the *Third Correction.* (*always to be added.*)
Arguments:—Sidereal Time and Date.

Sidereal Time.	July 1.	Aug. 1.	Sept. 1.	Oct. 1.	Nov. 1.	Dec. 1.	Dec. 31.
h	' "	' "	' "	' "	' "	' "	' "
0	0 36	0 43	0 53	1 5	1 16	1 24	1 27
2	0 39	0 41	0 47	0 56	1 1	1 18	1 25
4	0 48	0 44	0 44	0 49	0 0	7	1 17
6	1 0	0 51	0 46	0 44	0 0	55	1 4
8	1 12	1 1	0 51	0 44	0 0	49	0 50
10	1 20	1 10	0 59	0 48	0 0	37	0 39
12	1 21	1 17	1 7	0 55	0 0	30	0 33
14	1 21	1 19	1 1	1 4	0 0	24	0 35
16	1 12	1 16	1 1	1 11	0 0	18	0 43
18	1 0	1 9	1 1	1 16	0 0	12	0 56
20	0 48	0 59	1 1	1 16	0 0	6	1 10
22	0 40	0 50	1 1	1 12	0 0	0	1 21
24	0 36	0 43	0 0	1 5	0 0	0	1 27

TABLE
For converting INTERVALS of MEAN SOLAR Time into Equivalent INTERVALS
of SIDEREAL Time.

HOURS.			MINUTES.						SECONDS.						
Hours of Mean Time.	Equivalents in Sidereal Time.			Minutes of Mean Time.	Equivalents in Sidereal Time.		Minutes of Mean Time.	Equivalents in Sidereal Time.		Seconds of Mean Time.	Equivalents in Sidereal Time.		Seconds of Mean Time.	Equivalents in Sidereal Time.	
1	^h 1	^m 0	^s 9.8565	1	^m 1	^s 0.1643	31	^m 31	^s 5.0925	1	^s 1.0027	31	^s 31.084		
2	2	0	19.7130	2	2	0.3286	32	32	5.2568	2	2.0055	32	32.087		
3	3	0	29.5694	3	3	0.4928	33	33	5.4211	3	3.0082	33	33.090		
4	4	0	39.4259	4	4	0.6571	34	34	5.5853	4	4.0110	34	34.093		
5	5	0	49.2824	5	5	0.8214	35	35	5.7496	5	5.0137	35	35.095		
6	6	0	59.1388	6	6	0.9857	36	36	5.9139	6	6.0164	36	36.098		
7	7	1	8.9953	7	7	1.1499	37	37	6.0782	7	7.0192	37	37.101		
8	8	1	18.8518	8	8	1.3142	38	38	6.2424	8	8.0219	38	38.104		
9	9	1	28.7083	9	9	1.4785	39	39	6.4067	9	9.0246	39	39.106		
10	10	1	38.5647	10	10	1.6428	40	40	6.5710	10	10.0274	40	40.109		
11	11	1	48.4212	11	11	1.8070	41	41	6.7353	11	11.0301	41	41.112		
12	12	1	58.2777	12	12	1.9713	42	42	6.8995	12	12.0329	42	42.115		
13	13	2	8.1342	13	13	2.1356	43	43	7.0638	13	13.0356	43	43.117		
14	14	2	17.9906	14	14	2.2998	44	44	7.2281	14	14.0383	44	44.120		
15	15	2	27.8471	15	15	2.4641	45	45	7.3924	15	15.0411	45	45.123		
16	16	2	37.7036	16	16	2.6284	46	46	7.5566	16	16.0438	46	46.125		
17	17	2	47.5600	17	17	2.7927	47	47	7.7209	17	17.0465	47	47.128		
18	18	2	57.4165	18	18	2.9569	48	48	7.8852	18	18.0493	48	48.131		
19	19	3	7.2730	19	19	3.1212	49	49	8.0495	19	19.0520	49	49.134		
20	20	3	17.1295	20	20	3.2855	50	50	8.2137	20	20.0548	50	50.136		
21	21	3	26.9859	21	21	3.4498	51	51	8.3780	21	21.0575	51	51.139		
22	22	3	36.8424	22	22	3.6140	52	52	8.5423	22	22.0602	52	52.142		
23	23	3	46.6989	23	23	3.7783	53	53	8.7066	23	23.0630	53	53.145		
24	24	3	56.5554	24	24	3.9426	54	54	8.8708	24	24.0657	54	54.147		
				25	25	4.1069	55	55	9.0351	25	25.0685	55	55.150		
				26	26	4.2711	56	56	9.1994	26	26.0712	56	56.153		
				27	27	4.4354	57	57	9.3637	27	27.0739	57	57.156		
				28	28	4.5997	58	58	9.5279	28	28.0767	58	58.158		
				29	29	4.7640	59	59	9.6922	29	29.0794	59	59.161		
				30	30	4.9282	60	60	9.8565	30	30.0821	60	60.164		

TABLE
FOR CONVERTING INTERVALS OF MEAN SOLAR TIME INTO EQUIVALENT INTERVALS
OF SIDEREAL TIME.

FRACTIONS OF A SECOND.

Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.
0.01	0.01003	0.34	0.34093	0.67	0.67189
0.02	0.02006	0.35	0.35096	0.68	0.68186
0.03	0.03008	0.36	0.36099	0.69	0.69189
0.04	0.04011	0.37	0.37101	0.70	0.70199
0.05	0.05014	0.38	0.38104	0.71	0.71194
0.06	0.06016	0.39	0.39107	0.72	0.72197
0.07	0.07019	0.40	0.40110	0.73	0.73200
0.08	0.08022	0.41	0.41112	0.74	0.74203
0.09	0.09025	0.42	0.42115	0.75	0.75205
0.10	0.10027	0.43	0.43118	0.76	0.76208
0.11	0.11030	0.44	0.44120	0.77	0.77211
0.12	0.12033	0.45	0.45123	0.78	0.78214
0.13	0.13036	0.46	0.46126	0.79	0.79216
0.14	0.14038	0.47	0.47129	0.80	0.80219
0.15	0.15041	0.48	0.48131	0.81	0.81222
0.16	0.16044	0.49	0.49134	0.82	0.82225
0.17	0.17047	0.50	0.50137	0.83	0.83227
0.18	0.18049	0.51	0.51140	0.84	0.84230
0.19	0.19052	0.52	0.52142	0.85	0.85233
0.20	0.20055	0.53	0.53145	0.86	0.86235
0.21	0.21057	0.54	0.54148	0.87	0.87238
0.22	0.22060	0.55	0.55151	0.88	0.88241
0.23	0.23063	0.56	0.56153	0.89	0.89244
0.24	0.24066	0.57	0.57156	0.90	0.90246
0.25	0.25068	0.58	0.58159	0.91	0.91249
0.26	0.26071	0.59	0.59162	0.92	0.92252
0.27	0.27074	0.60	0.60164	0.93	0.93255
0.28	0.28077	0.61	0.61167	0.94	0.94257
0.29	0.29079	0.62	0.62170	0.95	0.95260
0.30	0.30082	0.63	0.63173	0.96	0.96263
0.31	0.31085	0.64	0.64175	0.97	0.97266
0.32	0.32088	0.65	0.65178	0.98	0.98268
0.33	0.33090	0.66	0.66181	0.99	0.99271

This TABLE is useful for the conversion of MEAN SOLAR into SIDEREAL TIME.
 required = Sidereal Time at the preceding Mean Noon + the Equivalent to the given Mean Time.
 — To convert 22^m 23^s 62 Mean Time at Greenwich, Jan. 2, 1842, into Sidereal Time.

real Time at the preceding Mean Noon, viz. January 2, 1842, is 12^h 46^m 50^s 70.

2^h 0^m 0^s }
 22 0 } The Table gives the Equivalent
 25 0 } Sidereal Intervals,
 0 62 }

The Sum is the Sidereal Time required, 21 9 39 71

TABLE
For converting INTERVALS of SIDEREAL Time into Equivalent INTERVALS of
MEAN SOLAR Time.

HOURS.		MINUTES.				SECONDS.			
Hour of Sidereal Time.	Equivalents in Mean Time.	Minutes of Sidereal Time.	Equivalents in Mean Time.	Minutes of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.
	h m s		m s		m s		s		s
1	0 59 50.1704	1	0 59.8362	31	30 54.9814	1	0.9973	31	30.915
2	1 59 40.3409	2	1 59.6723	32	31 54.7576	2	1.9945	32	31.915
3	2 59 30.5113	3	2 59.5085	33	32 54.5337	3	2.9918	33	32.905
4	3 59 20.6818	4	3 59.3447	34	33 54.3099	4	3.9891	34	33.905
5	4 59 10.8522	5	4 59.1809	35	34 54.0861	5	4.9864	35	34.905
6	5 59 1.0226	6	5 59.0170	36	35 54.0623	6	5.9836	36	35.905
7	6 58 51.1931	7	6 58.8532	37	36 53.9384	7	6.9809	37	36.895
8	7 58 41.3635	8	7 58.6894	38	37 53.7746	8	7.9782	38	37.895
9	8 58 31.5340	9	8 58.5256	39	38 53.6108	9	8.9754	39	38.895
10	9 58 21.7044	10	9 58.3617	40	39 53.4470	10	9.9727	40	39.895
11	10 58 11.8748	11	10 58.1979	41	40 53.2831	11	10.9700	41	40.885
12	11 58 2.0453	12	11 58.0341	42	41 53.1193	12	11.9672	42	41.885
13	12 57 52.2157	13	12 57.8703	43	42 52.9555	13	12.9645	43	42.882
14	13 57 42.3862	14	13 57.7064	44	43 52.7917	14	13.9618	44	43.879
15	14 57 32.5566	15	14 57.5426	45	44 52.6278	15	14.9591	45	44.877
16	15 57 22.7270	16	15 57.3788	46	45 52.4640	16	15.9563	46	45.874
17	16 57 12.8975	17	16 57.2150	47	46 52.3002	17	16.9536	47	46.871
18	17 57 3.0679	18	17 57.0511	48	47 52.1364	18	17.9509	48	47.869
19	18 56 53.2384	19	18 56.8873	49	48 51.9725	19	18.9481	49	48.866
20	19 56 43.4088	20	19 56.7235	50	49 51.8087	20	19.9454	50	49.863
21	20 56 33.5792	21	20 56.5597	51	50 51.6449	21	20.9427	51	50.860
22	21 56 23.7497	22	21 56.3958	52	51 51.4810	22	21.9399	52	51.858
23	22 56 13.9201	23	22 56.2320	53	52 51.3172	23	22.9372	53	52.855
24	23 56 4.0906	24	23 56.0682	54	53 51.1534	24	23.9345	54	53.852
		25	24 55.9044	55	54 50.9896	25	24.9318	55	54.849
		26	25 55.7405	56	55 50.8257	26	25.9290	56	55.847
		27	26 55.5767	57	56 50.6619	27	26.9263	57	56.844
		28	27 55.4129	58	57 50.4981	28	27.9236	58	57.841
		29	28 55.2490	59	58 50.3343	29	28.9208	59	58.838
		30	29 55.0852	60	59 50.1704	30	29.9181	60	59.836

TABLE

For converting INTERVALS of SIDEREAL Time into Equivalent INTERVALS of MEAN SOLAR Time.

FRACTIONS OF A SECOND.

Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.
0 01	0 00997	0 34	0 33907	0 67	0 66817
0 02	0 01995	0 35	0 34904	0 68	0 67814
0 03	0 02992	0 36	0 35902	0 69	0 68812
0 04	0 03989	0 37	0 36899	0 70	0 69809
0 05	0 04986	0 38	0 37896	0 71	0 70806
0 06	0 05984	0 39	0 38894	0 72	0 71803
0 07	0 06981	0 40	0 39891	0 73	0 72801
0 08	0 07978	0 41	0 40888	0 74	0 73798
0 09	0 08975	0 42	0 41885	0 75	0 74795
0 10	0 09973	0 43	0 42883	0 76	0 75793
0 11	0 10970	0 44	0 43880	0 77	0 76790
0 12	0 11967	0 45	0 44877	0 78	0 77787
0 13	0 12965	0 46	0 45874	0 79	0 78784
0 14	0 13962	0 47	0 46872	0 80	0 79782
0 15	0 14959	0 48	0 47869	0 81	0 80779
0 16	0 15956	0 49	0 48866	0 82	0 81776
0 17	0 16954	0 50	0 49864	0 83	0 82773
0 18	0 17951	0 51	0 50861	0 84	0 83771
0 19	0 18948	0 52	0 51858	0 85	0 84768
0 20	0 19945	0 53	0 52855	0 86	0 85765
0 21	0 20943	0 54	0 53853	0 87	0 86762
0 22	0 21940	0 55	0 54850	0 88	0 87760
0 23	0 22937	0 56	0 55847	0 89	0 88757
0 24	0 23934	0 57	0 56844	0 90	0 89754
0 25	0 24932	0 58	0 57842	0 91	0 90752
0 26	0 25929	0 59	0 58839	0 92	0 91749
0 27	0 26926	0 60	0 59836	0 93	0 92746
0 28	0 27924	0 61	0 60833	0 94	0 93743
0 29	0 28921	0 62	0 61831	0 95	0 94741
0 30	0 29918	0 63	0 62828	0 96	0 95738
0 31	0 30915	0 64	0 63825	0 97	0 96735
0 32	0 31913	0 65	0 64823	0 98	0 97732
0 33	0 32910	0 66	0 65820	0 99	0 98730

This TABLE is useful for the conversion of SIDEREAL into MEAN SOLAR Time.
 Solar Time required = Mean Time at the preceding Sidereal Noon + the Equivalent to the given Sidereal Time.
 EXAMPLE.—To convert 21^h 9^m 39^s.71 Sidereal Time at Greenwich, Jan. 2, 1842, into Mean Time.

Mean Time at the preceding Sidereal Noon, viz. January 1 5 16 13^m.91
 21^h 0^m 0^s }
 9 0 } The Table gives the Equivalent
 39 0 } Mean Interval,
 0.71 }

 The Sum is the Mean Time required, Jan. 2 2 22 25.62

LATITUDES AND LONGITUDES OF THE PRINCIPAL
OBSERVATORIES.

The Longitudes are reckoned from the Meridian of Greenwich.

North Latitudes and West Longitudes are indicated by the sign + :

South Latitudes and East Longitudes by the sign —.

ABERDEEN - - - -	(Marischal College.)	
	Lat. + 57° 8' 57".8	} Mr. George Innes, <i>Ast. Nach.</i> vol. x. page 211.
	Long. + 0 ^h 8 ^m 22 ^s .78	
ABO - - - - -	Lat. + 60° 26' 57"	<i>Argelander's Observations</i> , vol. page 21, and vol. ii. pages 25, 27 <i>Ast. Nach.</i> vol. ix. page 264.
	Long. — 1 ^h 29 ^m 8 ^s .8	
ALTONA - - - - -	(Prof. Schumacher.)	
	Lat. + 53° 32' 45"	<i>Gauss on the Latitudes of Göttingen and Altona</i> , page 71. (Göttingen, 1828.) <i>Ast. Nach.</i> vol. viii. page 132.
	Long. — 0 ^h 39 ^m 46 ^s .6	
ARMAGH - - - - -	Lat. + 54° 21' 12".7	} Communicated by the Rev. Dr. Robinson.
	Long. + 0 ^h 26 ^m 35 ^s .5	
BEDFORD - - - - -	(Capt. Smyth, R.N.)	
	Lat. + 52° 8' 27".6	} <i>Mem. Ast. Soc.</i> vol. v. page 370.
	Long. + 0 ^h 1 ^m 51 ^s .97	
BERLIN - - - - -	Lat. + 52° 31' 13".5	} <i>Berliner Astron. Jahrbuch für</i> 1833, page 249.
	Long. — 0 ^h 53 ^m 35 ^s .5	
—— (New Observ ^r)	Lat. + 52° 30' 16".0	} <i>Berliner Astron. Jahrbuch für</i> 1839, page 240.
	Long. — 0 ^h 53 ^m 35 ^s .3	
BLACKHEATH - - - -	(Mr. Wrottesley.)	
	Lat. + 51° 28' 2"	} <i>Mem. of Royal Ast. Soc.</i> vol. x. page 161.
	Long. — 0 ^h 0 ^m 2 ^s .7	
BREMEN - - - - -	(Dr. Olbers.)	
	Lat. + 53° 4' 36"	<i>Ast. Nach.</i> vol. i. page 240. This is the mean of the results given in <i>Ast. Nach.</i> vol. i. page 240; vol. iv. page 392; vol. v. page 247; vol. viii. pages 131 and 284.
	Long. — 0 ^h 35 ^m 15 ^s .9	
BRUSSELS - - - - -	(Prof. Quetelet.)	
	Lat. + 50° 51' 10".7	} <i>Annuaire de l'observatoire de</i> <i>Bruelles, pour l'An 1837</i> , pages 264 and 265.
	Long. — 0 ^h 17 ^m 29 ^s .0	
BUDA - - - - -	(Ofen.)	
	Lat. + 47° 29' 12".2	<i>Zeitschrift für Astronomie</i> , vol. iii. page 70; and <i>Mem. Ast. Soc.</i> vol. i. page 280. 1 ^h 16 ^m 12 ^s .7 <i>Zach's Correspond. Astron.</i> vol. vii. page 263; and <i>Zeitschrift für Astronomie</i> , vol. ii. page 507.
	Long. —	

LATITUDES AND LONGITUDES OF THE PRINCIPAL OBSERVATORIES.

BUSHEY HEATH	- - (Colonel Beaufoy.)	Lat. + 51° 37' 44".3	} <i>Mem. Ast. Soc.</i> vol. ii. page 129.
		Long. + 0 ^h 1 ^m 20 ^s .93	
CAMBRIDGE	- - -	Lat. + 52° 12' 51".8	<i>Camb. Phil. Trans.</i> vol. v. p. 279.
		Long. — 0 ^h 0 ^m 23 ^s .54	<i>Camb. Phil. Trans.</i> vol. iii. p. 168.
CAPE OF GOOD HOPE	- Lat. — 33° 56' 3"		<i>Mem. Roy. Ast. Soc.</i> vol. vi. page 130.
	Long. — 1 ^h 13 ^m 55 ^s .0		Communicated by Mr. Henderson.
CHRISTIANA	- - -	Lat. + 59° 54' 5"	<i>Ast. Nach.</i> vol. vi. page 148.
	Long. — 0 ^h 42 ^m 59 ^s .8		<i>Ast. Nach.</i> vol. v. page 382.
COPENHAGEN	- - - (University.)	Lat. + 55° 40' 53"	<i>Ast. Nach.</i> vol. v. page 366.
	Long. — 0 ^h 50 ^m 19 ^s .8		<i>Ast. Nach.</i> vol. ix. page 164.
CRACOW	- - - -	Lat. + 50° 3' 49".7	<i>Ast. Nach.</i> vol. viii. page 176;
	Long. — 1 ^h 19 ^m 52 ^s .45		and vol. x. page 228. <i>Ast. Nach.</i> vol. x. page 232.
DORFAT	- - - -	Lat. + 58° 22' 47"	<i>Struve's Astronom. Observations,</i>
	Long. — 1 ^h 46 ^m 55 ^s		vol. vi. page 60. <i>Bessel's Tabulæ Regiomontanæ,</i>
			page 2.
DUBLIN	- - - -	Lat. + 53° 23' 13"	} <i>Ast. Nach.</i> vol. x. page 274.
	Long. + 0 ^h 25 ^m 22 ^s		
EDINBURGH	- - -	Lat. + 55° 57' 23".2	<i>Ast. Soc. Not.</i> vol. iii. page 201.
	Long. + 0 ^h 12 ^m 43 ^s .6		<i>Mem. Ast. Soc.</i> vol. iv. page 568.
FLORENCE	- - - - (St. Giovanni.)	Lat. + 43° 46' 41".4	} <i>Zach's Correspondance Astronomique,</i>
	Long. — 0 ^h 45 ^m 3 ^s .6		
GENEVA	- - - -	Lat. + 46° 11' 59".4	<i>Mémoire sur une nouvelle détermination sur la Latitude de Genève</i> By M. Gautier. (<i>Genève</i>)
	Long. — 0 ^h 24 ^m 37 ^s .5		<i>Ast. Soc. Not.</i> vol. viii. page 260.
GOTHA	- - - - (Seeberg.)	Lat. + 50° 56' 5"	<i>Geogr. Latitudes of Gotha</i>
	Long. — 0 ^h 42 ^m 56 ^s .4		page 80. <i>Seeberg's Geogr. leg.</i> page 2.
GÖTTINGEN	- - -	Lat. + 51° 31' 48"	<i>Geogr. Latitudes of Göttingen</i>
	Long. — 0 ^h 39 ^m 46 ^s .5		page 71. page 2.

LATITUDES AND LONGITUDES OF THE PRINCIPAL
OBSERVATORIES.

GREENWICH	- - -	Lat. + 51° 28' 39"·0	<i>Mem. Ast. Soc.</i> vol. ii. pages 31 and 529.
		Long. 0 ^h 0 ^m 0 ^s	
KENSINGTON	- - -	(Sir James South.)	
		Lat. + 51° 30' 12"·7	} <i>Mem. Ast. Soc.</i> vol. v. page 370
		Long. + 0 ^h 0 ^m 46 ^s ·78	
KEW	- - -	Lat. + 51° 28' 37"	} <i>Baily's Astron. Tables and Formulæ</i> , page 123. (London, 1822)
		Long. + 0 ^h 1 ^m 3 ^s	
KÖNIGSBERG	- - -	Lat. + 54° 42' 50"	<i>Introduction to Bessel's Astron. Observations for 1821.</i>
		Long. — 1 ^h 22 ^m 0 ^s ·5	<i>Bessel's Tab. Reg.</i> page 2.
KREMSMÜNSTER	- - -	Lat. + 48° 3' 29"	<i>Ast. Nach.</i> vol. vi. page 67.
		Long. — 0 ^h 56 ^m 32 ^s ·3	<i>Ast. Nach.</i> vol. iii. page 121.
MADRAS	- - -	Lat. + 13° 4' 9"·2	} <i>Taylor's Result of Ast. Obs. at the Observatory</i> , vol. i. 1831 pages 94 & 95. (Madras, 1832.)
		Long. — 5 ^h 21 ^m 3 ^s ·77	
MAKERSTOON	- - -	(Sir T. M. Brisbane.)	
		Lat. + 55° 34' 45"	} <i>Ast. Nach.</i> vol. x. page 214.
		Long. + 0 ^h 10 ^m 4 ^s ·0	
MANHEIM	- - -	Lat. + 49° 29' 14"	<i>Zach's Correspondance Astronomique</i> , vol. i. page 193.
		Long. — 0 ^h 33 ^m 51 ^s ·4	<i>Ast. Nach.</i> vol. ii. page 398.
MARSEILLES	- - -	Lat. + 43° 17' 50"·1	<i>Zach's Attraction des Montagnes</i> , vol. ii. page 591.
		Long. — 0 ^h 21 ^m 29 ^s ·0	<i>Ast. Nach.</i> vol. iv. page 36.
MILAN	- - -	(Brera.)	
		Lat. + 45° 28' 1"	<i>Zach's Correspondance Astronomique</i> , vol. v. page 300.
		Long. — 0 ^h 36 ^m 47 ^s ·2	<i>Ast. Nach.</i> vol. ix. page 312.
MODENA	- - -	Lat. + 44° 38' 53"	} <i>Effem. Astron. di Milano</i> for 1829, pages 94 and 60.
		Long. — 0 ^h 43 ^m 43 ^s ·2	
MUNICH	- - -	(Bogenhausen.)	
		Lat. + 48° 8' 45"	<i>Ast. Nach.</i> vol. i. page 221.
		Long. — 0 ^h 46 ^m 26 ^s ·5	<i>Ast. Nach.</i> vol. viii. page 148.
NAPLES	- - -	(Capo di Monte.)	
		Lat. + 40° 51' 46"·6	<i>Ast. Nach.</i> vol. v. page 294.
		Long. — 0 ^h 57 ^m 0 ^s ·3	Communicated by M. Cacciastore to Captain B. Hall, R.N.
NICOLEFF	- - -	Lat. + 46° 58' 20"·6	<i>Ast. Nach.</i> vol. vii. page 261.
		Long. — 2 ^h 7 ^m 55 ^s ·1	<i>Ast. Nach.</i> vol. vii. page 306.

LATTITUDES AND LONGITUDES OF THE PRINCIPAL
OBSERVATORIES.

BERMSKIRK - - - -	(Rev. W. R. Dawes.) Lat. + $53^{\circ} 34' 18''$ Long. + $0^{\text{h}} 11^{\text{m}} 36^{\text{s}}$	} <i>Mem. Ast. Soc.</i> vol. v. page 370.
OXFORD - - - -	Lat. + $51^{\circ} 45' 40''$ Long. + $0^{\text{h}} 5^{\text{m}} 1^{\text{s}}\cdot 5$	} <i>Requisite Tables</i> , 3rd edit. (from Trig. Survey.)
PADUA - - - -	Lat. + $45^{\circ} 24' 2''$ Long. - $0^{\text{h}} 47^{\text{m}} 29^{\text{s}}\cdot 2$	<i>Ast. Nach.</i> vol. v. page 411. <i>Ast. Nach.</i> vol. iv. page 347.
PALERMO - - - -	Lat. + $38^{\circ} 6' 44''$ Long. - $0^{\text{h}} 53^{\text{m}} 25^{\text{s}}\cdot 6$	<i>Cacciatore</i> , in Books 7 and 8 of <i>Palermo Observations</i> . Communicated by M. Cacciatore to Captain B. Hall, R.N.
PARAMATTA - - - -	Lat. - $33^{\circ} 48' 49''\cdot 8$ Long. - $10^{\text{h}} 4^{\text{m}} 6^{\text{s}}\cdot 25$	} <i>Phil. Trans.</i> for 1829. Part iii. pages 16 and 29.
PARIS - - - -	Lat. + $48^{\circ} 50' 13''$ Long. - $0^{\text{h}} 9^{\text{m}} 21^{\text{s}}\cdot 5$	<i>Conn. des Tems</i> for 1835, page 356. <i>Phil. Trans.</i> for 1827. (<i>Hender- son on the Longitudes of Green- wich and Paris.</i>)
PETERSBURGH - - - -	Lat. + $59^{\circ} 56' 31''$ Long. - $2^{\text{h}} 1^{\text{m}} 15^{\text{s}}\cdot 8$	<i>Conn. des Tems</i> for 1836, page 340. <i>Ast. Nach.</i> vol. viii. page 360.
PORTSMOUTH - - - -	Lat. + $50^{\circ} 48' 3''$ Long. + $0^{\text{h}} 4^{\text{m}} 23^{\text{s}}\cdot 9$	} <i>Requisite Tables</i> , 3rd edit. (from Trig. Survey.)
PRAGUE - - - -	Lat. + $50^{\circ} 5' 18''\cdot 5$ Long. - $0^{\text{h}} 57^{\text{m}} 41^{\text{s}}\cdot 9$	<i>Ast. Nach.</i> vol. viii. page 198. <i>Ast. Nach.</i> vol. iii. page 264.
ROME - - - -	(Roman College.) Lat. + $41^{\circ} 53' 52''$ Long. - $0^{\text{h}} 49^{\text{m}} 54^{\text{s}}\cdot 7$	<i>Conn. des Tems</i> for 1822, page 312. <i>Ast. Nach.</i> vol. viii. page 88.
ST. FERNANDO, near CADIZ - - - - }	Lat. + $36^{\circ} 27' 45''$ or $42''$ Long. + $0^{\text{h}} 24^{\text{m}} 49^{\text{s}}\cdot 1$	<i>Zach's Correspondance Astrono- mique</i> , vol. xiv. pages 240 to 243. <i>Ast. Nach.</i> vol. page 358.
ST. HELENA - - - -	Lat. - $15^{\circ} 55' 26''$ Long. + $0^{\text{h}} 22^{\text{m}} 50^{\text{s}}$	} Communicated by Johnson.
SLOUGH - - - -	(Sir J. F. W. Herschel.) Lat. + $51^{\circ} 30' 20''$ Long. + $0^{\text{h}} 2^{\text{m}} 24^{\text{s}}$	} <i>Baily's</i> <i>and For- mulae</i> , 1827.)
SOUTH KILWORTH - - - -	(Rev. W. Pearson.) Lat. + $52^{\circ} 25' 51''$ Long. + $0^{\text{h}} 4^{\text{m}} 26^{\text{s}}\cdot 0$	} <i>Pear-</i> <i>ii.</i> page 705.

LATITUDES AND LONGITUDES OF THE PRINCIPAL
OBSERVATORIES.

SPEYER	- - - -	Lat. + 49° 18' 55".2	<i>Schwerd's Observations. Part</i> page xx.
		Long. — 0 ^h 33 ^m 46 ^s .5	<i>Ast. Nach.</i> vol. iii. page 46.
STRASBURGH	- - -	Lat. + 48° 34' 40"	} <i>Comptes Rendus Hebdomadaires</i> } <i>des Séances de L'Académie de</i> <i>Sciences.</i> 2nd Semestre. 1836, page 52
		Long. — 0 ^h 31 ^m 0 ^s .8	
TURIN	- - - -	(New Observatory.)	} Communicated by M. Plana t } Captain B. Hall, R.N.
		Lat. + 45° 4' 6"	
		Long. — 0 ^h 30 ^m 48 ^s .4	
VERONA	- - - -	(Lyceum.)	(Approximate.) <i>Effem. Astron. di Milano for 1829</i> page 60.
		Lat. + 45° 26'	
		Long. — 0 ^h 44 ^m 0 ^s .1	
VIENNA	- - - -	Lat. + 48° 12' 35"	<i>Littrow's Astron. Observations</i> Part viii. page 124. <i>Ast. Nach.</i> vol. iii. page 64.
		Long. — 1 ^h 5 ^m 31 ^s .9	
VIVIERS	- - - -	(M. Flaugergues.)	<i>Zach's Correspondance Astrono-</i> <i>mique</i> , vol. ii. page 138. <i>Ast. Nach.</i> vol. v. page 252.
		Lat. + 44° 29' 11"	
		Long. — 0 ^h 18 ^m 44 ^s .8	
WILNA	- - - -	Lat. + 54° 41' 0"	<i>Ast. Nach.</i> vol. iv. page 562. <i>Ast. Nach.</i> vol. viii. page 96.
		Long. — 1 ^h 41 ^m 11 ^s .9	

EXPLANATION OF THE ARTICLES

CONTAINED IN

THE NAUTICAL ALMANAC AND ASTRONOMICAL EPHEMERIS FOR THE YEAR 1842.

ALL the articles of the Ephemeris have been computed for Greenwich MEAN solar time; and where they are given for apparent solar or sidereal time, it has been chiefly for the convenience of astronomers. A *day* is the interval of time between the departure of any meridian from a heavenly body and its succeeding return to it, and derives its name from the body with which the motion of the meridian is compared. The interval between the departure and return of a meridian to the Sun is called a *solar day*; in the case of the Moon, the interval is called a *lunar day*; and in that of a Star, a *sidereal day*. The revolution of the Earth on its axis is always performed in the same time; and if the heavenly bodies preserved the same positions with respect to each other, the intervals between the departure and return of a meridian to each would be the same, and all days, consequently, of equal length. The Sun, (or, more strictly, the Earth in its orbit,) the Moon, and the Planets are, however, in continual motion; and with velocities not only different from each other, but varying in each particular body: the length of a day, as determined by any of these bodies, is therefore a variable quantity.

Astronomers, with the view of obtaining a convenient and uniform measure of time, have recourse to a *mean solar day*, the length of which is equal to the mean or average of all the apparent solar days in a year. An imaginary Sun, called the *mean Sun*, is conceived to move uniformly in the Equator with the real Sun's *mean* motion in Right Ascension, and the interval between the departure of any meridian from the *mean Sun* and its succeeding return to it is the duration of the mean solar day. Clocks and Chronometers are adjusted to mean solar time; so that a complete revolution (through 24 hours) of the hour hand of one of these machines should be performed in exactly the same interval as the revolution of the Earth on its axis with respect to the *mean Sun*. If the *mean Sun* could be observed on the meridian at the instant that the clock or chronometer indicated $0^{\text{h}} 0^{\text{m}} 0^{\text{s}}$, it would again be observed there when the hour hand returned to the same position. As the time deduced from observations of the *true Sun* is called *apparent time*, so the time deduced from the *mean Sun*, or indicated by the clock, represents its motion, is denominated *mean time*.

We cannot immediately observe the *true Sun*, but from an observation of time, which is the angular distance in time between the *true Sun* and the *mean Sun*, we may readily deduce it. Suppose the *true Sun* be observed on the meridian of Greenwich, Jan. 1, 1842; the equation of time at this instant is $3^{\text{m}} 51^{\text{s}} \cdot 02$, and, by adding this to the *mean time* in the column, it is to be added to

apparent time"; hence it appears that the corresponding mean time is $0^h 3^m 51^s \cdot 02$, or that the mean Sun had passed the meridian previously to the true Sun, and that at the instant of observation the mean time clock or chronometer ought to indicate this time.

A mere inspection of the columns of the Ephemeris is, of itself, sufficient to show that the quantities are continually varying, and that some reduction is necessary where data are to be obtained for any time differing from that for which the quantities are registered. Take, for instance, the Sun's Right Ascension on Page II. of the month of January; on January 1, it is $18^h 46^m 45^s \cdot 08$; on January 2, it is $18^h 51^m 9^s \cdot 85$; in the course of 24 mean hours it has therefore increased by $4^m 24^s \cdot 77$. If, then, the Right Ascension were required for any time between the Mean Noons of January 1 and 2, as at 6^h from Mean Noon of January 1, it would be necessary to increase the Right Ascension on January 1, by the proportional part of the daily increase due for the 6^h , viz. by one-fourth part, or $1^m 6^s \cdot 19$. This would in all cases be required, even under the meridian of Greenwich, for which the quantities have been specially computed. Let a person be now supposed to be under a meridian 15° West of Greenwich. The positions of the heavenly bodies, as referred to the centre of the Earth, are independent of meridians, and are the same for all places at the same absolute instant; but the relative times at Greenwich and the assumed meridian would be different. If it were 1^h from mean noon at the one place, it could not be 1^h from mean noon at the other; for when we speak of time, we mean, as regards a visible phenomenon, the distance of the Sun *westward* from a given meridian, and at the same absolute moment of time the Sun *cannot* be at the same distance (*reckoning westward*) from two meridians which are 15° distant from each other. Before we can make use of the Ephemeris, it is therefore necessary to ascertain, in every instance, the distance of the Sun (*in time*) from the meridian of Greenwich, or what is commonly called the corresponding Greenwich time; and this is evidently equal to the given time under the assumed meridian, *increased* or *diminished* by the difference (*in time*) of the two meridians, according as the assumed meridian is to the *Westward* or *Eastward* of Greenwich. In a mean Solar day, or 24 mean Solar hours, the Earth, by its rotation from West to East, has caused every meridian in succession from East to West to pass the mean Sun; and since the motion is uniform, all the meridians distant from each other 15° will have passed the mean Sun, at intervals of one mean hour; the meridian to the Eastward passing first, or being, as compared with the Sun, always one mean hour in advance of the Westerly meridian. When it is 6^h from mean noon at a place 15° West of Greenwich, it is therefore 7^h from mean noon at Greenwich; and it is for this Greenwich time that we must deduce the quantities required from the Ephemeris.

If a chronometer adjusted to Greenwich mean time be at hand, the Greenwich time may be immediately obtained by applying a correction, deduced from the daily rate and interval elapsed, and this will be preferable in all cases for obtaining the requisite data from the Ephemeris.

The day adopted in this Ephemeris is supposed to begin at mean noon, or at the instant when a clock or chronometer shows $0^h 0^m 0^s$, Greenwich mean time, and is continued through the 24 hours, to the following mean noon, when another day begins. It may therefore be called the *Mean Astronomical Day*, although, in practice, astronomers begin the day at the moment the true Sun's centre is on their meridian.

In the civil, or common, method of reckoning, the day is supposed to commence at the *preceding* midnight, and to be counted only to 12 hours or noon, when the 12 hours are reckoned over again to the next midnight. The civil reckoning is therefore always 12^h in advance of the astronomical reckoning; and the civil time corresponding

to any given astronomical time is hence readily found by *adding* 12^h to the latter: thus, if to Jan. $1^d 7^h 49^m$, astronomical time, be added 12^h , the sum will be Jan. $1^d 19^h 49^m$, or Jan. $1^d 7^h 49^m$ P.M. civil time. Again, to Jan. $1^d 15^h 35^m$, astronomical time, add 12^h ; the sum will be Jan. $2^d 3^h 35^m$ A.M. civil time. It thus appears that, from noon to midnight, the day of the month and the hour of the day are the same in both methods; but from midnight to noon they differ; for at midnight, when a new civil day commences, the astronomical day wants 12^h of its completion.

The conversion of civil into astronomical time is on the contrary performed by *diminishing* the former by 12^h . Thus, January $2^d 3^h 35^m$ A.M. civil time, diminished by 12^h , leaves January $1^d 15^h 35^m$, for the corresponding astronomical time.

To each month there are devoted twenty-two pages, distinguished by the Roman numerals I. to XXII.

For convenience of interpolation, the quantities that follow next in order of succession have been added at the bottom of each page. Thus the quantities opposite to February 1 will be found inserted also opposite to January 32, the number of the days in each month having been intentionally increased for such purpose.

Page I. of each Month.

The contents of this page are adapted to *Apparent Noon*, or the instant when the Sun's centre is on the meridian of Greenwich. The *Sun's Right Ascension*, here given, is *affected with Aberration*, and reckoned from the true Equinox; it is therefore the Sidereal Time at Apparent Noon, or the time which ought to be shown by a Sidereal Clock, at that instant. The *Sun's Apparent Declination* is the angular distance of the Sun from the Equator, measured on the meridian.

The columns entitled "Diff. for 1 hour" are intended to facilitate the reduction of the quantities from Apparent Noon to any other time. The values of these quantities for any proposed *mean* time will, however, be more accurately ascertained by means of the numbers on page II., from which, indeed, they have been derived.

The *Sidereal Time of the Sun's Semidiameter passing the Meridian* is useful for reducing a transit observation of either limb of the Sun, when one only has been observed, to the transit of the centre.

The *Equation of Time* is the difference between Apparent and Mean Time, and therefore serves for the conversion of either time into the other. The numbers here given, show, for Greenwich Apparent Noon, the distance of the mean Sun from the meridian, or the portion of time to be *added to*, or *subtracted from*, (according to the precept at the head of the column,) Greenwich Apparent Noon to obtain the corresponding Mean Time at the same meridian, or the time which ought to be shown by the Mean Time Clock. It differs from the Equation of Time on page II., because the equation itself varies in the interval between Apparent and Mean

Where time is deduced from observations of the Sun, the *apparent* time; to convert it into mean time, the equation and it is to be applied to apparent time, according to the precept at the head of the column.

Thus, suppose the apparent time deduced from an observation of the Sun at Greenwich on January 16, 1842, in longitude 45° or 3^h east of Greenwich, required to convert it into mean time: Subtracting the equation of time from the apparent time at the place, we have 3^h for the true time at Greenwich. The difference of the equation for 1 hour

3, gives $2^{\text{h}} 52^{\text{m}} 3$ for the variation in 3 hours, and this being added (because the equation is increasing) to $10^{\text{m}} 5^{\text{s}} 87$, the equation of time at apparent noon, the result is $10^{\text{m}} 8^{\text{s}} 39$, to be added (according to the precept at the head of the column) to the given apparent time 6^{h} , whence we obtain $6^{\text{h}} 10^{\text{m}} 8^{\text{s}} 39$, for the mean time required.

At page I. of the month of April, we observe, at the head of the column, *added to* *subt. from*, which signifies that a change of precept occurs in the course of the month, and between the equations opposite to the 15th and 16th days of the month, a black line, indicating that the change occurs between the Mean Noons of those days. The upper precept applies to all the quantities above the black line; and the lower precept to all the quantities below it: that is, in the instance referred to, the Equation of Time is to be *added to* Apparent Time from the 1st of April to the instant at which the equation becomes $0^{\text{m}} 0^{\text{s}}$, which happens between the noons of the 15th and 16th days of the month; but after that instant the equation is to be *subtracted* from Apparent to obtain Mean Time.

Page II. of each Month.

The *Sun's Apparent Right Ascension* and *Declination* at mean noon have been deduced from its *Apparent* longitude and latitude given at page III., and the *apparent* obliquity of the ecliptic at page 266. They denote the *apparent* position of the true Sun with reference to the equator, and the true equinox, at the instant the Greenwich mean time clock, or chronometer, indicates $0^{\text{h}} 0^{\text{m}} 0^{\text{s}}$, or when the hour angle of the true Sun is equal to the equation of time.

To find the Right Ascension and Declination for any other mean time and place, as at $9^{\text{h}} 20^{\text{m}}$ A.M. March 2, 1842, in longitude 98° , or $6^{\text{h}} 32^{\text{m}}$ West of Greenwich. The astronomical time, corresponding to $9^{\text{h}} 20^{\text{m}}$ A.M. March 2, is $21^{\text{h}} 20^{\text{m}}$ from the noon of March 1, or March $1^{\text{d}} 21^{\text{h}} 20^{\text{m}}$, agreeably to what has been said before. The longitude, being West of Greenwich, must be added to March $1^{\text{d}} 21^{\text{h}} 20^{\text{m}}$, and the result, March $2^{\text{d}} 3^{\text{h}} 52^{\text{m}}$, is the corresponding Greenwich mean time, for which the Right Ascension and Declination are to be found. The difference between the Right Ascensions on March 2 and March 3 is $3^{\text{m}} 43^{\text{s}} 88$, that is, in the 24 mean hours succeeding the Mean Noon of March 2, the Right Ascension has increased by this quantity; it will, therefore, have received a proportional part of the increase in $3^{\text{h}} 52^{\text{m}}$, and the amount is readily obtained by this proportion, $24^{\text{h}} : 3^{\text{m}} 43^{\text{s}} 88 :: 3^{\text{h}} 52^{\text{m}} : 36^{\text{s}} 07$; which, being *added to* $22^{\text{h}} 51^{\text{m}} 54^{\text{s}} 49$, the Right Ascension at Mean Noon of March 2, gives $22^{\text{h}} 52^{\text{m}} 30^{\text{s}} 56$, for the Right Ascension at the time proposed.

In a similar manner the Declinations indicate a decrease of $22' 56'' 0$ in the 24 hours; therefore $24^{\text{h}} : 22' 56'' 0 :: 3^{\text{h}} 52^{\text{m}} : 3' 41'' 7$, the proportional part of the decrease for $3^{\text{h}} 52^{\text{m}}$, which, *subtracted* from S. $7^{\circ} 14' 28'' 0$, leaves S. $7^{\circ} 10' 46'' 3$, for the Declination required.

The Semidiameter of the Sun. The numbers in this column express the angle at the centre of the earth subtended by the Sun's Semidiameter, and are required for reducing observations of the limb to the centre, as in the instance of measuring the altitude of the Sun's upper or lower limb, or the distance of the Moon from the Sun.

Equation of Time. The numbers in this column are the values of the equation at the instant of Mean Noon, and therefore serve more particularly to convert *Mean* into *Apparent* Time: for which purpose we have only to apply the equation according to the precept at the head of the column. Thus, if from mean noon of April 1, or

12^h , be subtracted the equation $4^m 1^s \cdot 21$, the difference $11^h 55^m 58^s \cdot 79$ is the corresponding apparent time. To find the equation of time at 8^h A.M. mean time on April 16, 1842, in longitude 30° , or $2^h 0^m$, West of Greenwich. Add the difference of longitude to the given time, because it is West, and the corresponding astronomical mean time at Greenwich is April $15^d 22^h 0^m$. The variation in 24 hours is $14^s \cdot 81$, that is, the sum of the equations belonging to the noons of the 15th and 16th, because the equation has decreased to 0 and then increased in the interval, therefore

$$24^h : 14^s \cdot 81 :: 22^h 0^m : 13^s \cdot 58,$$

which, being greater than $0^m 4^s \cdot 72$, the equation on the 15th, which was decreasing, shows that in the $22^h 0^m$ the equation has passed through its state of decrease to zero, or 0, and is now increasing. The difference $8^s \cdot 86$ is the equation of time at the time proposed, and is to be added to mean time, because it has passed the zero.

Sidereal Time at Mean Noon is the angular distance of the First point of Aries, or the true Vernal Equinox, from the meridian, at the instant of Mean Noon: it is therefore the Right Ascension of the Mean Sun, or the time which ought to be shown by a Sidereal Clock at Greenwich, when the Mean Time Clock indicates $0^h 0^m 0^s$.

A Sidereal Clock represents the rotation of the Earth on its axis, as referred to the Stars, its hour-hand performing a complete revolution through the 24 hours in the interval between the departure of any meridian from a Star and its next return to it. At the moment that the Vernal Equinox, or a Star whose Right Ascension is $0^h 0^m 0^s$, is on the meridian of Greenwich, the Sidereal Clock ought to show $0^h 0^m 0^s$, and at the succeeding return of the Star, or the Equinox, to the same meridian, the Clock ought to indicate the same time.

The sidereal time here given is that in common use among astronomers, and expresses the actual hour-angle from the meridian, westward, of the true equinoctial point at the moment of observation. It is therefore affected by the equation of the equinoxes; and is not, strictly speaking, a *mean* or uniformly increasing quantity. It ought, therefore, to be termed *apparent sidereal time* in the same manner as apparent solar time reckons from the actual arrival of the sun's centre on the meridian; and in like manner, as mean solar time is reckoned from the arrival of an imaginary sun, moving uniformly with its mean velocity, so *mean sidereal time* (whose expression would be simply $\frac{\odot\text{'s mean longitude}}{15}$) would be reckoned from the transit of, not the

true, but the *mean* equinoctial point. The smallness of the fluctuations to which a clock, regulated to *apparent* sidereal time compared with one regulated to *mean* sidereal time, is subject, being at the utmost only $2^s \cdot 3$ in a period of nineteen years, has prevented the practical inconvenience of this from being felt: no clock being sufficiently perfect to go during so long a period without frequent re-adjusting; and as the corrections applied by astronomers to the observed right ascensions of all objects are adapted to this supposed irregularity in the rate of the clock, the mean right ascensions thence deduced come out correct. It has, therefore, not been necessary, in this instance, to depart from received usage, however theoretical, in any mode of counting time may appear, since a change in this mode would involve the necessity of a corresponding change in all tables of nutation.

The Sidereal time at Mean Noon is useful in all cases where it is necessary to deduce the true time of day from observations of the heavenly bodies, or to reduce sidereal to mean solar time, and *vice versa*. It is commonly used for that purpose, called a Table of Acc-

apparent time"; hence it appears that the corresponding mean time is $0^h 3^m 51^s \cdot 02$, or that the mean Sun had passed the meridian previously to the true Sun, and that at the instant of observation the mean time clock or chronometer ought to indicate this time.

A mere inspection of the columns of the Ephemeris is, of itself, sufficient to show that the quantities are continually varying, and that some reduction is necessary where data are to be obtained for any time differing from that for which the quantities are registered. Take, for instance, the Sun's Right Ascension on Page II. of the month of January; on January 1, it is $18^h 46^m 45^s \cdot 08$; on January 2, it is $18^h 51^m 9^s \cdot 85$; in the course of 24 mean hours it has therefore increased by $4^m 24^s \cdot 77$. If, then, the Right Ascension were required for any time between the Mean Noons of January 1 and 2, as at 6^h from Mean Noon of January 1, it would be necessary to increase the Right Ascension on January 1, by the proportional part of the daily increase due for the 6^h , viz. by one-fourth part, or $1^m 6^s \cdot 19$. This would in all cases be required, even under the meridian of Greenwich, for which the quantities have been specially computed. Let a person be now supposed to be under a meridian 15° West of Greenwich. The positions of the heavenly bodies, as referred to the centre of the Earth, are independent of meridians, and are the same for all places at the same absolute instant; but the relative times at Greenwich and the assumed meridian would be different. If it were 1^h from mean noon at the one place, it could not be 1^h from mean noon at the other; for when we speak of time, we mean, as regards a visible phenomenon, the distance of the Sun *westward* from a given meridian, and at the same absolute moment of time the Sun *cannot* be at the same distance (*reckoning westward*) from two meridians which are 15° distant from each other. Before we can make use of the Ephemeris, it is therefore necessary to ascertain, in every instance, the distance of the Sun (*in time*) from the meridian of Greenwich, or what is commonly called the corresponding Greenwich time; and this is evidently equal to the given time under the assumed meridian, *increased* or *diminished* by the difference (*in time*) of the two meridians, according as the assumed meridian is to the *Westward* or *Eastward* of Greenwich. In a mean Solar day, or 24 mean Solar hours, the Earth, by its rotation from West to East, has caused every meridian in succession from East to West to pass the mean Sun; and since the motion is uniform, all the meridians distant from each other 15° will have passed the mean Sun, at intervals of one mean hour; the meridian to the Eastward passing first, or being, as compared with the Sun, always one mean hour in advance of the Westerly meridian. When it is 6^h from mean noon at a place 15° West of Greenwich, it is therefore 7^h from mean noon at Greenwich; and it is for this Greenwich time that we must deduce the quantities required from the Ephemeris.

If a chronometer adjusted to Greenwich mean time be at hand, the Greenwich time may be immediately obtained by applying a correction, deduced from the daily rate and interval elapsed, and this will be preferable in all cases for obtaining the requisite data from the Ephemeris.

The day adopted in this Ephemeris is supposed to begin at mean noon, or at the instant when a clock or chronometer shows $0^h 0^m 0^s$, Greenwich mean time, and is continued through the 24 hours, to the following mean noon, when another day begins. It may therefore be called the *Mean Astronomical Day*, although, in practice, astronomers begin the day at the moment the true Sun's centre is on their meridian.

In the civil, or common, method of reckoning, the day is supposed to commence at the *preceding* midnight, and to be counted only to 12 hours or noon, when the 12 hours are reckoned over again to the next midnight. The civil reckoning is therefore always 12^h in advance of the astronomical reckoning: and the civil time corresponding

to any given astronomical time is hence readily found by *adding* 12^h to the latter: thus, if to Jan. $1^d 7^h 49^m$, astronomical time, be added 12^h , the sum will be Jan. $1^d 19^h 49^m$, or Jan. $1^d 7^h 49^m$ P. M. civil time. Again, to Jan. $1^d 15^h 35^m$, astronomical time, add 12^h ; the sum will be Jan. $2^d 3^h 35^m$ A. M. civil time. It thus appears that, from noon to midnight, the day of the month and the hour of the day are the same in both methods; but from midnight to noon they differ; for at midnight, when a new civil day commences, the astronomical day wants 12^h of its completion.

The conversion of civil into astronomical time is on the contrary performed by *diminishing* the former by 12^h . Thus, January $2^d 3^h 35^m$ A. M. civil time, diminished by 12^h , leaves January $1^d 15^h 35^m$, for the corresponding astronomical time.

To each month there are devoted twenty-two pages, distinguished by the Roman numerals I. to XXII.

For convenience of interpolation, the quantities that follow next in order of succession have been added at the bottom of each page. Thus the quantities opposite to February 1 will be found inserted also opposite to January 32, the number of the days in each month having been intentionally increased for such purpose.

Page I. of each Month.

The contents of this page are adapted to *Apparent Noon*, or the instant when the Sun's centre is on the meridian of Greenwich. The *Sun's Right Ascension*, here given, is *affected with Aberration*, and reckoned from the true Equinox; it is therefore the Sidereal Time at Apparent Noon, or the time which ought to be shown by a Sidereal Clock, at that instant. The *Sun's Apparent Declination* is the angular distance of the Sun from the Equator, measured on the meridian.

The columns entitled "Diff. for 1 hour" are intended to facilitate the reduction of the quantities from Apparent Noon to any other time. The values of these quantities for any proposed *mean* time will, however, be more accurately ascertained by means of the numbers on page II., from which, indeed, they have been derived.

The *Sidereal Time of the Sun's Semidiameter passing the Meridian* is useful for reducing a transit observation of either limb of the Sun, when one only has been observed, to the transit of the centre.

The *Equation of Time* is the difference between Apparent and Mean Time, and therefore serves for the conversion of either time into the other. The numbers here given, show, for Greenwich Apparent Noon, the distance of the mean Sun from the meridian, or the portion of time to be *added to*, or *subtracted from*, (according to the precept at the head of the column,) Greenwich Apparent Noon to obtain the corresponding Mean Time at the same meridian, or the time which ought to be shown by the Mean Time Clock. It differs from the Equation of Time on page II., because the equation itself varies in the interval between Apparent and Mean Noon.

Where time is deduced from observations of the Sun, the *immediate* result is *apparent* time; to convert it into mean time, the equation of time is necessary, and it is to be applied to apparent time, according to the precept at the head of the column.

Thus, suppose the apparent time deduced from an observation of the Sun on January 16, 1842, in longitude 45° or 3^h east of Greenwich, to be 6^h , and it were required to convert it into mean time: Subtracting the difference of longitude 3^h from the apparent time at the place, we have 3^h for the corresponding apparent time at Greenwich. The difference of the equation for 1 hour is $0^m 841$, which, multiplied by

3, gives $2^{\circ}523$ for the variation in 3 hours, and this being added (because the equation is increasing) to $10^{\text{m}} 5^{\circ}87$, the equation of time at apparent noon, the result is $10^{\text{m}} 8^{\circ}39$, to be added (according to the precept at the head of the column) to the given apparent time 6^{h} , whence we obtain $6^{\text{h}} 10^{\text{m}} 8^{\circ}39$, for the mean time required.

At page I. of the month of April, we observe, at the head of the column, $\frac{\text{added to}}{\text{subt. from}}$, which signifies that a change of precept occurs in the course of the month; and between the equations opposite to the 15th and 16th days of the month, a black line, indicating that the change occurs between the Mean Noons of those days. The upper precept applies to all the quantities above the black line; and the lower precept to all the quantities below it: that is, in the instance referred to, the Equation of Time is to be *added to* Apparent Time from the 1st of April to the instant at which the equation becomes $0^{\text{m}} 0^{\circ}$, which happens between the noons of the 15th and 16th days of the month; but after that instant the equation is to be *subtracted* from Apparent to obtain Mean Time.

Page II. of each Month.

The *Sun's Apparent Right Ascension and Declination* at mean noon have been deduced from its *Apparent* longitude and latitude given at page III., and the *apparent* obliquity of the ecliptic at page 266. They denote the *apparent* position of the true Sun with reference to the equator, and the true equinox, at the instant the Greenwich mean time clock, or chronometer, indicates $0^{\text{h}} 0^{\text{m}} 0^{\circ}$, or when the hour angle of the true Sun is equal to the equation of time.

To find the Right Ascension and Declination for any other mean time and place, as at $9^{\text{h}} 20^{\text{m}}$ A.M. March 2, 1842, in longitude 98° , or $6^{\text{h}} 32^{\text{m}}$ West of Greenwich. The astronomical time, corresponding to $9^{\text{h}} 20^{\text{m}}$ A.M. March 2, is $21^{\text{h}} 20^{\text{m}}$ from the noon of March 1, or March $1^{\text{d}} 21^{\text{h}} 20^{\text{m}}$, agreeably to what has been said before. The longitude, being West of Greenwich, must be added to March $1^{\text{d}} 21^{\text{h}} 20^{\text{m}}$, and the result, March $2^{\text{d}} 3^{\text{h}} 52^{\text{m}}$, is the corresponding Greenwich mean time, for which the Right Ascension and Declination are to be found. The difference between the Right Ascensions on March 2 and March 3 is $3^{\text{m}} 43^{\circ}88$, that is, in the 24 mean hours succeeding the Mean Noon of March 2, the Right Ascension has increased by this quantity; it will, therefore, have received a proportional part of the increase in $3^{\text{h}} 52^{\text{m}}$, and the amount is readily obtained by this proportion, $24^{\text{h}} : 3^{\text{m}} 43^{\circ}88 :: 3^{\text{h}} 52^{\text{m}} : 36^{\circ}07$; which, being *added to* $22^{\text{h}} 51^{\text{m}} 54^{\circ}49$, the Right Ascension at Mean Noon of March 2, gives $22^{\text{h}} 52^{\text{m}} 30^{\circ}56$, for the Right Ascension at the time proposed.

In a similar manner the Declinations indicate a decrease of $22' 56''0$ in the 24 hours; therefore $24^{\text{h}} : 22' 56''0 :: 3^{\text{h}} 52^{\text{m}} : 3' 41''7$, the proportional part of the decrease for $3^{\text{h}} 52^{\text{m}}$, which, *subtracted* from S. $7^{\circ} 14' 28''0$, leaves S. $7^{\circ} 10' 46''3$, for the Declination required.

The *Semidiameter of the Sun*. The numbers in this column express the angle at the centre of the earth subtended by the Sun's Semidiameter, and are required for reducing observations of the limb to the centre, as in the instance of measuring the altitude of the Sun's upper or lower limb, or the distance of the Moon from the Sun.

Equation of Time. The numbers in this column are the values of the equation at the instant of Mean Noon, and therefore serve more particularly to convert *Mean* into *Apparent* Time: for which purpose we have only to apply the equation according to the precept at the head of the column. Thus, if from mean noon of April 1, or

12^h, be subtracted the equation 4^m 1'·21, the difference 11^h 55^m 58'·79 is the corresponding apparent time. To find the equation of time at 8^h A.M. mean time on April 16, 1842, in longitude 30°, or 2^h 0^m, West of Greenwich. Add the difference of longitude to the given time, because it is West, and the corresponding astronomical mean time at Greenwich is April 15^d 22^h 0^m. The variation in 24 hours is 14'·81, that is, the *sum* of the equations belonging to the noons of the 15th and 16th, because the equation has decreased to 0 and then increased in the interval, therefore

$$24^h : 14'·81 :: 22^h 0^m : 13'·58,$$

which, being greater than 0^m 4'·72, the equation on the 15th, which was decreasing, shows that in the 22^h 0^m the equation has passed through its state of decrease to zero, or 0, and is now increasing. The difference 8'·86 is the equation of time at the time proposed, and is to be added to mean time, because it has passed the zero.

Sidereal Time at Mean Noon is the angular distance of the First point of Aries, or the true Vernal Equinox, from the meridian, at the instant of Mean Noon: it is therefore the Right Ascension of the Mean Sun, or the time which ought to be shown by a Sidereal Clock at Greenwich, when the Mean Time Clock indicates 0^h 0^m 0^s.

A Sidereal Clock represents the rotation of the Earth on its axis, as referred to the Stars, its hour-hand performing a complete revolution through the 24 hours in the interval between the departure of any meridian from a Star and its next return to it. At the moment that the Vernal Equinox, or a Star whose Right Ascension is 0^h 0^m 0^s, is on the meridian of Greenwich, the Sidereal Clock ought to show 0^h 0^m 0^s, and at the succeeding return of the Star, or the Equinox, to the same meridian, the Clock ought to indicate the same time.

The sidereal time here given is that in common use among astronomers, and expresses the actual hour-angle from the meridian, westward, of the true equinoctial point at the moment of observation. It is therefore affected by the equation of the equinoxes; and is not, strictly speaking, a *mean* or uniformly increasing quantity. It ought, therefore, to be termed *apparent sidereal time* in the same manner as apparent solar time reckons from the actual arrival of the sun's centre on the meridian; and in like manner, as mean solar time is reckoned from the arrival of an imaginary sun, moving uniformly with its mean velocity, so *mean sidereal time* (whose expression would be simply $\frac{\odot\text{'s mean longitude}}{15}$) would be reckoned from the transit of, not the

true, but the *mean* equinoctial point. The smallness of the fluctuations to which a clock, regulated to *apparent* sidereal time compared with one regulated to *mean* sidereal time, is subject, being at the utmost only 2'·3 in a period of nineteen years, has prevented the practical inconvenience of this from being felt: no clock being sufficiently perfect to go during so long a period without frequent re-adjusting; and as the corrections applied by astronomers to the observed right ascensions of all objects are adapted to this supposed irregularity in the rate of the clock, the mean right ascensions thence deduced come out correct. It has, therefore, not been thought necessary, in this instance, to depart from received usage, however theoretically objectionable such a mode of counting time may appear, since a change in this respect would involve the necessity of a corresponding change in all tables of nutation.

The Sidereal time at Mean Noon is useful in all cases where mean solar time is to be deduced from observations of the heavenly bodies. It serves to facilitate the reduction of sidereal to mean solar time, and *vice versâ*, by the help of the tables commonly used for that purpose, called a Table of Acceleration of Sidereal on Mean

Solar Time, and the corresponding Table of Retardation of Mean on Sidereal Time according to the following rule:—Convert the interval from the mean noon immediately preceding, from the denomination given, to that required; and if mean time be required, the result will at once be that which the clock should show; but if sidereal time be that sought, the result must be added to the sidereal time at the preceding mean noon.

Example:—To convert 21^h 9^m 24^s·04 sidereal time, Jan. 2, 1842, into mean solar time, for the meridian of Greenwich.

Sidereal time given	21 ^h 9 ^m 24 ^s ·04
Sidereal time at mean noon, January 2	18 46 50·70
Interval in sidereal time from mean noon	2 22 33·34
Retardation of mean on sidereal time for the interval	— 23·35
Mean solar time required	2 22 9·99

which is the interval elapsed since mean noon, expressed in mean time; and therefore the time which ought to be shown by a mean time clock.

Vice versâ, to convert 2^h 22^m 9^s·99 mean solar time, January 2, 1842, into sidereal time for the same meridian.

Mean interval from mean noon, January 2	2 22 9·99
Acceleration of sidereal on mean time for the interval	+ 23·35
Sidereal interval from mean noon	2 22 33·34
Sidereal time at mean noon, January 2	18 46 50·70
Sidereal time required	21 9 24·04

which ought to be the time shown by the sidereal clock at the instant in question.

If the place of observation be not on the meridian of Greenwich, the sidereal time must be corrected by the *addition* of 9^s·8565 for each hour (and proportional parts for the minutes and seconds) of longitude, if the place be to the west of Greenwich; but by its *subtraction*, if to the east. Thus, in 9^h 10^m 6^s west longitude, the sidereal time at mean noon, January 2, instead of being, as in the foregoing Example, 18^h 46^m 50^s·70, must be corrected by adding 1^m 30^s·37, thus giving 18^h 48^m 21^s·07 for the time to be used, instead of that set down in the column.

The conversion of mean solar to sidereal time, and *vice versâ*, may, however, be performed, and with perhaps less liability to error, by means of this and of the column entitled *Mean Time of Transit of the First point of Aries*, at page XXII. of each month, using the Tables of Time Equivalents, inserted at pages 560 to 563.

To convert mean solar into sidereal time: To the sidereal time at the *preceding* mean noon add the sidereal interval corresponding to the given mean time; the sum will be the sidereal time required. (See Example at page 561.)

To convert sidereal into mean solar time: To the mean time at the *preceding* sidereal noon, add the mean interval corresponding to the given sidereal time; the sum will be the mean solar time required. (See Example at page 563.)

In this mode of reduction there is not, as in the former, by means of the Tables of Acceleration and Retardation, any distinction of cases, all the quantities being additive.

The Tables of Time Equivalents differ from the Tables of Acceleration and Retardation, in containing the *values* of intervals of each species of time, expressed in

ns of the other, instead of the *corrections*, respecting the proper application of *ch*, a difficulty is sometimes felt by unpractised computers. Sidereal time at mean noon is also used in finding the mean time of transit of a *venly* body.

Page III. of each Month.

The *Sun's Longitude*, here given, is affected with *aberration*, and reckoned from the *ue* equinox: it is therefore the *apparent* longitude of the Sun at the instant of mean noon; or it is (if ρ denote the Radius Vector) the *true* longitude of the Sun at the time $0^h - 495^m 775^s \rho$, because aberration causes the Sun to appear behind its true place in the Ecliptic.

The *Sun's Latitude* is the angular distance of the Sun's centre from the plane of the Ecliptic, measured on a circle perpendicular to that plane.

The *Logarithm of the Radius Vector of the Earth* is the logarithm of the distance between the centre of the Earth and the *apparent* place of the centre of the Sun at mean noon, the mean distance, or the semi-axis major of the orbit, being considered unity.

These quantities are derived *immediately* from the Solar tables, and enter into, indeed are the foundation of, nearly all the subsequent operations in the Ephemeris. Whenever the *true* longitude of the Earth is required, as in calculating the Geocentric position of a Planet or Comet from its Heliocentric position, it is necessary to reduce the *apparent* longitude of the Sun to the *true*, by correcting it for aberration. The Sun's aberration for every tenth day is given at page 266, and may thence be readily obtained for any other day of the year. (See *Sun's Aberration*, page 587.) In strictness, the *Logarithm of the Radius Vector* should also be corrected for aberration, but this is generally neglected, the correction being too small to affect the accuracy of the results in practice.

The Sun's longitude, entering into the expressions for aberration and Solar nutation, is required for the reduction of the Stars' places.

The *Moon's Semidiameter* is the angle under which her Semidiameter would appear if viewed from the centre of the Earth; and her *Horizontal Parallax* is the *greatest* angle under which the Earth's Equatorial Semidiameter would appear if seen from the centre of the Moon. The former is requisite to obtain the position of the centre from an observation of the Moon's *limb*, as in all cases of altitudes or lunar distances. The latter, for computing the horizontal parallax of the Moon at any given latitude on the Earth, *considered as a Spheroid*; also for finding the parallax in altitude, Right Ascension, &c., for the purpose of reducing an observation of the Moon made on the surface of the Earth, to what it would have been if made at the centre.

In reducing observations of the Moon made at sea, the horizontal *equatorial* parallax is generally used for finding the parallax in altitude, without regarding the previous reduction to the Spheroid; but in calculations requiring considerable precision, as in lunar occultations and solar eclipses, this reduction cannot be dispensed with.

Example. To find the Moon's Semidiameter and Horizontal Parallax at 6^h A.M. February 23, 1842, at a place 15°, or 1^h to the east of Greenwich. The civil time at the place, expressed in mean astronomical time, is February 22^d 18^h, from which subtracting 1^h, because the place is to the east of Greenwich, we have February 22^d 17^h for the corresponding time at Greenwich, or 5^h after midnight. Proceeding from the semidiameter given for midnight of the 22nd, we must compute the proportional part of the variation in 12 hours ~~due to the~~ time elapsed since midnight, viz. 5^h; and for ordinary purposes at ~~se~~ to take this proportional part for the

correction of the registered value preceding the given time; thus the *semidiameter* for midnight, or 12^h, of the 22nd, is 16' 36''·9, and for the 23rd at noon, or 24^h, is 16' 40''·3; the difference 3''·4 is the variation in 12 hours. Therefore,

$$12^h : 3''\cdot4 :: 5^h : 1''\cdot4,$$

which, *added* (because the quantities are increasing) to 16' 36''·9, gives 16' 38''·3 for the Moon's Semidiameter at the time proposed. Similarly, the Horizontal Parallax at midnight of the 22nd is 60' 58''·2; and at the noon of the 23rd it is 61' 10''·7; the difference 12''·5 is the variation in the 12 hours which include the given time; therefore, 12^h : 12''·5 :: 5^h : 5''·21, or 5''·2, which *added* (because the quantities are increasing) to 60' 58''·2 gives 61' 3''·4 for the Horizontal Parallax required. If greater accuracy be desired, a further correction must be applied to the values just obtained, on account of second differences, to compensate the error produced by supposing the first differences uniform. But the *greatest* error in the semidiameter which can arise by this supposition in the present instance is not two-tenths of a second; for, select four semidiameters from the Ephemeris, two preceding, and two following the given time, and take the first and second differences, thus:—

February 22,	0 ^h	16' 32''·3	+	4''·6	—	1''·2
	12	16 36·9		3·4		1·2
23,	0	16 40·3	+	2·2	—	
	12	16 42·5				

The mean of the second differences is 1''·2, and $\frac{1}{2}$ of this, which is the *greatest* effect, is only 0''·15.

A similar operation performed on the Parallaxes will show the error, that would arise on the supposition of uniform or equal first differences, to be five-tenths of a second.

Page IV. of each Month.

The *Moon's Longitude and Latitude* at Mean Noon and Midnight indicate the position of the Moon at these respective times, referred to the Ecliptic and the true Equinox, as it would be seen from the centre of the earth. They are the results deduced immediately from the Lunar Tables, and are the foundation of all subsequent calculations in which the Moon is concerned. These quantities are now of little use to the seaman, as the position of the Moon, with respect to the Equator, is given for every hour in the succeeding pages; but the Moon's Longitude is involved in the formulæ for nutation, and is therefore necessary for its determination. In finding the Moon's Longitude and Latitude for any other times than those of Mean Noon and Midnight, it is necessary to apply the equation of second, and sometimes even of third and fourth differences, on account of the irregular variation of her motion.

The *Moon's Age* at Mean Noon is the Mean Time elapsed since the Moon's ecliptic conjunction with the Sun, or since the Sun and Moon had the same Longitude. The numbers in this column represent her age at Greenwich, and are expressed in days, and decimal parts of a day.

The *Moon's Meridian Passage*.—This column contains the Greenwich Mean Time, to the nearest tenth of a minute, at which the Moon's centre is on the *upper* Meridian

Greenwich, and is useful to indicate when the Latitude may be obtained from an observed meridian altitude of the Moon; also, in conjunction with a Table of Semi-diurnal Arcs, to determine approximately the times of the rising and setting of the Moon: it is likewise useful in finding the time of High Water.

When the symbol (\odot) denoting conjunction occurs, as on January 10, we are to understand that the Moon does *not* pass the *upper* meridian on that day at Greenwich. This is the case once in every lunation, and arises from the circumstance of the Lunar day being greater than the Mean Solar day, and including it within its limits. In the present instance, the excess is $0^h 49^m \cdot 7$, or the lunar day is equal to $24^h 49^m \cdot 7$ Mean Solar time; the Moon passes the meridian on the 9th at $23^h 10^m \cdot 9$, or $49^m \cdot 1$ *previously* to the noon of the 10th, and does not return to the same meridian until $0^h 0^m \cdot 6$ *after* the noon of the 11th. For the same reason there is also one day in every lunation on which the Moon does not transit the *lower* meridian, and this happens about the time of opposition, or when the difference of longitude of the Sun and Moon is 80° . In the list of Moon-culminating Stars, at pages 480 to 521, the days on which only one transit occurs are readily seen. On June 8th (page 497), for instance, it appears that the Moon transits the *lower* meridian only, while on July 21st (page 502), the only transit is that at the *upper* meridian.

To find the Mean Time of Transit under any other Meridian, suppose 45° or 3^h west of Greenwich, on January 25, 1842. The Meridian being to the west of Greenwich, the Transit will take place *after* the Greenwich time of Transit on the 25th; therefore take the difference between the Meridian Passages on the 25th and 26th, which is $0^h 59^m \cdot 8$. Then, $24^h : 0^h 59^m \cdot 8 :: 3^h : 7^m \cdot 5$, which *added* to the Greenwich Mean Time of Transit gives $11^h 35^m \cdot 5$ for the Mean Time of Transit at the given Meridian. Had the assumed Meridian been 3^h to the east of Greenwich, the Transit would have taken place *before* the Transit at Greenwich, and the proportional part of the difference between the 24th and 25th, must in this case have been *subtracted*. The times thus deduced are only approximate; but they are sufficiently accurate for the purposes usually required.

Pages V. to XII. of each Month.

The *Moon's Right Ascension and Declination* for every hour of the day, with the *Difference of Declination* for 10 minutes. By means of the quantities here given, the Latitude, Time, Azimuth, Moon's rising and setting, &c., may be deduced, with nearly as little labour as is required in the case of the Sun. The numbers represent the position of the Moon, as it would appear from the centre of the Earth, with respect to the Equator and the true Equinox: and they are given for every hour, with the view of rendering any correction for second differences unnecessary, except where extreme precision is required. The Right Ascension for any time is readily obtained by simply adding the proportional part of the hourly variation due to the interval elapsed since the preceding hour. Thus, suppose the Right Ascension of the Moon were required at $8^h 45^m$ mean time of January 8, in longitude 60° , or 4^h east of Greenwich. The given time, $8^h 45^m$, diminished by 4^h , gives the corresponding Greenwich time $4^h 45^m$. The Right Ascension at 4^h is $16^h 51^m 18^s \cdot 85$, and at 5^h it is $16^h 53^m 36^s \cdot 59$; the difference, $2^m 17^s \cdot 74$, is the increase in the interval, or 60^m . Hence, $60^m : 2^m 17^s \cdot 74 :: 45^m : 1^m 43^s \cdot 31$, which being added to the Right Ascension at 4^h , gives $16^h 53^m 2^s \cdot 16$ for the Right Ascension at $4^h 45^m$ at Greenwich, or at $8^h 45^m$ under the proposed meridian. To find the Declination, we make use of the numbers in the column headed "Diff. Dec. for 10^m ." The number in this column standing

opposite to any hour is $\frac{1}{2}$ of the difference of the Declinations at that and the following hour. We therefore say, $10^m : 15''.77 :: 45^m : 1' 11''.0$, which being added (because the Declinations are increasing) to $S. 26^\circ 18' 15''.1$, the Declination at 4^h , gives $S. 26^\circ 19' 26''.1$, for the Declination at the time proposed.

The Phases of the Moon. These are given at page XII, to the nearest tenth of a minute. The numbers denote the Greenwich Mean Time, at which the difference of Longitude between the Sun and the Moon is $0^\circ, 90^\circ, 180^\circ$, or 270° , being

0° at the New Moon,
 90° at the First Quarter,
 180° at the Full Moon,
 270° at the Last Quarter.

The Moon's Apogee and Perigee. The numbers here given indicate, to the nearest hour, the Greenwich Mean Time at which the Moon is respectively at her greatest and least distance from the Earth.

Pages XIII. to XVIII. of each Month.

Lunar Distances.—These pages contain, for every third hour of Greenwich Mean Time, the angular distances between the apparent centres of the Moon and certain heavenly bodies, such as they would appear to an observer at the centre of the Earth. When a Lunar Distance has been observed on the surface of the Earth, and reduced to the centre, by clearing it of the effects of parallax and refraction, the numbers in these pages enable us to ascertain the exact Greenwich mean time at which the objects would have the same distance. They are arranged, from *west* to *east*, commencing each day with the object which is at the greatest distance *westward* of the Moon, in the precise order in which they appear in the heavens; *W.* indicating that the object is west, and *E.* east, of the Moon. Thus we have at one view, by a simple reference to the date, all the lunar distances which are available for the determination of the Longitude.

The columns headed "P. L. of Diff." contain the Proportional Logarithms of the Differences of the distances at intervals of three hours, which are used in finding the Greenwich time corresponding to a given distance, according to the following rule, viz.: For the given day, seek in the Ephemeris for the *nearest* distance *preceding*, in order of time, the given distance, and take the difference between it and the given distance; from the proportional logarithm of this difference subtract the proportional logarithm standing opposite to the said *nearest* distance in the Ephemeris; the remainder will be the proportional logarithm of a portion of time to be added to the hour answering to the *nearest* distance, to obtain the approximate Greenwich mean time corresponding to the given distance.

If the distance between the Moon and a Star increased or decreased uniformly, the Greenwich time corresponding to a given distance, as found by the above rule, would be strictly correct; but an inspection of the columns of the Proportional Logarithms in the Ephemeris will show that this is not the case; and as the knowledge of the exact Greenwich time is desirable, a correction must be applied to the time so found for the variation of the differences of the distances. This correction may be obtained by means of the Table at page 556 of the present volume, in the following manner:

1. Find the Approximate interval, by the preceding rule.
2. Take the difference between the proportional logarithms standing opposite to the distances in the Ephemeris which include the given distance.

3. With the approximate interval and this difference, as arguments, take out the correction from the table.

4. If the Proportional Logarithms are *decreasing*, add the correction to the approximate time; but if *increasing*, subtract it: the result will be the accurate Greenwich mean time.

Example I.—Suppose it were required to find the Greenwich Mean Time, at which the *reduced* distance between the Moon and α Pegasi would be $33^{\circ} 15' 12''$ on January 13, 1842. It appears, by inspecting the distances, that the time must be between XVIII^b and XXI^b: the *nearest* distance *preceding*, in order of time, the given distance is therefore the

Distance at XVIII ^b	- 33	°	54	'	2	"	and P. L.	- - 3645
<i>Reduced</i> Distance	- 33		15		12			
			0		38			6661
Difference	- -		0		38		P. L.	- - 6661
Approximate Interval	- 1 ^b		29 ^m		53 ^s		P. L.	- - 3016

The difference between the Proportional Logarithms in the Ephemeris, at XVIII^b and XXI^b, is 48. Opposite to 1^b 29^m 53^s (or the quantity nearest to it, 1^b 30^m), and under 48, in the Table, we have for the correction 15', which, *subtracted* from the Approximate Interval, 1^b 29^m 53^s, because the Proportional Logarithms are *increasing*, gives 1^b 29^m 38^s, for the true interval from XVIII^b: and hence the Greenwich Mean Time is 19^b 29^m 38^s.

We see that, in the preceding Example, the omission of this correction would only produce an error of 3 $\frac{1}{2}'$ in the Longitude. Cases may however occur, in which it would be greater.

It will sometimes happen, that the difference of the Proportional Logarithms will exceed 138, the limit of the Table of Correction; in this case the Table may be entered with the Approximate Interval, and *one-half or any fraction* of the difference of the Proportional Logarithms and the corresponding correction *increased in like proportion*.

Example II.—Suppose it were required to find the Greenwich Mean Time, at which the *reduced* distance between the Moon and Aldebaran would be $17^{\circ} 29' 16''$ on January 23rd, 1842. By inspecting the distances, it appears that the time must be between VI^b and IX^b; therefore take the

Distance at VI ^b	- 16	°	43	'	47	"	and P. L.	- - 3025
<i>Reduced</i> Distance	- 17		29		16			
			0		45			5974
Difference	- -		0		45		P. L.	- - 5974
Approximate Interval	- 1 ^b		31 ^m		17 ^s		P. L.	- - 2949

The difference between the Proportional Logarithms in the Ephemeris, at VI^b and IX^b, is 160, one-half of which is 80; under this number in the Table, and opposite that nearest the Approximate Interval, is 25': the correction is therefore 50' to be *added* to the Approximate Interval, because the Proportional Logarithms are *decreasing*; the time at Gfree

is 7^b 32^m 7^s.

The omission of the correction in the preceding example would produce an error of $12\frac{1}{2}'$ in Longitude; it may, however, be considered as an extreme case, and such as will seldom be met with.

The proportional logarithms also serve to point out the Star which is most favourably circumstanced for accurate observation; that Star being to be preferred which has the least Proportional Logarithm opposite to it: for, the greater the velocity of the Moon from or towards a Star, the greater is the reliance to be placed on an observation of the distance; and it is a property of Proportional Logarithms to decrease as their natural numbers increase: a smaller Proportional Logarithm, therefore, indicates a greater velocity of the Moon, or a greater variation of distance in the interval, upon which the value of the observation depends. Thus, on January 21, 1842, between Noon and III^h, Regulus is the most eligible star, because the Proportional Logarithm, 2553, is less than that of any other; and, by inspecting the columns of Proportional Logarithms, it will appear to deserve the preference until the end of the 23rd.

On the 28th day of May, between IX^h and Midnight, the following is the order of preference, as indicated by the Proportional Logarithms, viz., Antares, Spica α , α Arietis, α Pegasi, SUN, Fomalhaut.

It is by no means to be inferred from these remarks that observations of any of the distances are to be neglected; on the contrary, every registered star should invariably be observed when an opportunity offers. If, however, on a comparison of results, a considerable difference should be discovered, the Proportional Logarithms will indicate the stars which are least liable to be affected by errors of observation, and therefore deserving of a greater degree of confidence as to the accuracy of the results obtained from them.

Page XIX. of each Month.

Configurations of the Satellites of Jupiter.

In addition to the explanation given at the foot of the page, it may be remarked, that when two Satellites are in or near conjunction, instead of the usual symbol (\odot), it has been thought better to place one above the other, without regard to their actual latitudes, but merely to distinguish them in their relation of *upper* and *lower*.

The Satellites are in the superior parts of their orbits, or have Jupiter between them and the Earth, when they are moving from West to East, or towards the right-hand of the page; but they are in the inferior parts of their orbits, or between the Earth and Jupiter, when they are moving from East to West, or towards the left-hand: in the former case Eclipses and Occultations occur, and in the latter Transits of the Satellites and their Shadows.

If an inverting telescope be directed towards Jupiter on March 11, 1842, at 17^h 30^m Mean Time, the Satellites will appear to an observer at Greenwich in the positions as laid down in the Table. The 1st and 2nd Satellites, which are *really* to the left of the Planet, will appear to the right of it; and the 3rd and 4th, which are *really* to the right, will appear to be to the left.

West and *East*, at the head of the page, are inserted to show the positions of the Satellites with respect to Jupiter, as they would appear in a telescope that does *not* invert. Jupiter being always to the South of the zenith of Greenwich, the Satellites which are here laid down on the left of Jupiter would appear to the *West*, and those on the right-hand to the *East* of the planet.

As regards their positions to the east or west, the page viewed directly, exhibits the Satellites in an inverted order; but if the leaf be turned over, and the page viewed from the other side, they will appear in their real positions. The simplest mode of changing the position of a Satellite from apparent to real, and *vice versa*, is to draw a line from the Satellite through Jupiter's centre, and to place the Satellite upon this line at the same distance from the centre as before, only on the opposite side. If this operation be performed upon the Configurations as laid down in this volume, the Satellites will be reduced to their real positions.

As the Configurations are given for *Mean Astronomical time*, which agrees with *Civil time* only from 0^h to 12^h, or from noon to midnight, when the time exceeds 12^h the excess will indicate the Civil time of the succeeding day of the month.

Thus in April, 1842, the Configurations are given for 16^h mean time, but the 16th hour from noon is the same as the 4th hour from the following midnight, when a new Civil day has commenced. The appearances, therefore, relate to 4^h A.M. of the day following, according to the common mode of reckoning time; that is, the Configurations at 16^h on April the 26th relate to 4^h A.M., on April the 27th.

The Configurations enable an observer to distinguish the Satellites from each other, and from Stars in the vicinity of Jupiter.

Page XX. of each Month.

Eclipses of the Satellites of Jupiter.

On this page are given the Mean and Sidereal Times of the Eclipses of the Satellites, together with diagrams exhibiting the position of each Satellite with respect to the disc of the Planet at the moment of Immersion or Emersion, as it will appear in an inverting telescope. These diagrams have been laid down from calculations made for the eclipse nearest to the middle of each month; but they will serve very well for the whole of the month, *except near opposition*, the change in the position of Jupiter and his Shadow in the interval being too small to be appreciable by the eye, as is evident by comparing the Phases for any two successive months. All the Eclipses which happen when Jupiter is 8° above and the Sun 8° below the horizon of Greenwich, are marked with an asterisk to indicate that they are visible at that place; and those which happen when Jupiter is above, and the Sun below the horizon, are marked with a dagger, as, under very favourable circumstances, they may also be observed.

The Immersion (Im.) denotes the instant of the disappearance of the Satellite, by entering into the shadow of Jupiter; and the Emersion (Em.) the instant of its re-appearance at coming out of the shadow. They generally happen when the Satellite is apparently at some distance from the body of Jupiter, except near the opposition of Jupiter to the Sun, when the eclipse takes place near to the body of the planet. Before the opposition, the Immersions and Emersions happen on the Western side, but after opposition on the Eastern side, of the planet: With an inverting telescope, however, the appearances will be directly the contrary. Before the opposition, the Immersions only of the first Satellite are visible; and after the opposition, the Emersions only. It is seldom, also, that the Immersion and Emersion of the second Satellite can be observed at the same eclipse; but both phenomena are generally visible with the third and fourth Satellites.

To find the time at which the Immersion or Emersion of any of the Satellites will take place under any other meridian than that of Greenwich, it is merely necessary to

add the difference of longitude (*in time*) to the time of the phenomenon at Greenwich, if the meridian be *east* of Greenwich, or to *subtract* if it be *west*, and the sum or difference will be the time required. But this determines only the instant of the occurrence of the phenomenon: Jupiter may be below the horizon at this time; or he may be above it, and the intensity of sun-light, or even the brightness of twilight, may be such as to render the Satellites invisible: it is therefore necessary to ascertain the position of the Sun and Jupiter, with respect to the horizon, at the time of the phenomenon: this may be readily accomplished by means of a celestial globe, or near enough for the purpose, by finding the times of rising and setting of the objects, with the assistance of a table of semidiurnal arcs.

The Eclipses of Jupiter's Satellites, especially of the first, afford us, perhaps, the readiest means of determining the longitude; all that is necessary to be known being the exact time of observation: the difference between this time and the time at Greenwich, shows the difference of longitude at once, and it is *east* or *west* of Greenwich according as the time of observation is *greater* or *less* than the Greenwich time.

Suppose the Immersion of Jupiter's first Satellite to be observed, on January 18, 1842, at Paris at $16^{\text{h}} 14^{\text{m}} 29^{\text{s}} \cdot 0$ Mean Time at that place; by reference to page XX, it appears that the Immersion will take place at Greenwich at $16^{\text{h}} 5^{\text{m}} 7^{\text{s}} \cdot 5$ Greenwich Mean Time; the difference, $9^{\text{m}} 21^{\text{s}} \cdot 5$, is the difference of longitude between Greenwich and Paris; and, because the Paris time is greater than that at Greenwich, we infer that Paris is to the east of Greenwich.

Independent of defects in the tables, there are difficulties attending the observation of these phenomena which unfit them for *accurate* determinations of longitude. Different telescopes give different results; and care should be taken to have recourse to those corresponding observations which have been made under circumstances the most similar, and particularly with telescopes of the same quality and power. When extreme accuracy is not required, the Eclipses of the Satellites will always afford a good approximation towards the difference of meridians, and observations of them should on no account be neglected, especially when the Immersion and Emersion of the same Satellite are both visible.

Page XXI. of each Month.

Approximate Sidereal Times of the Occultations of Jupiter's Satellites by Jupiter, and of the Transits of the Satellites and their Shadows over the Disc of the Planet.

These phenomena are inserted in order to apprise Astronomers when they are about to happen, as observations of them may tend to improve the Tables of the Satellites. The instruments required to observe them with any thing like precision will preclude the possibility of their ever becoming available at sea. The times are given in days, hours, and minutes; the day being supposed to commence at mean noon, and the hours and minutes representing sidereal time, such as will be shown by a sidereal clock on that day.

The Phenomena for each Satellite are arranged under three distinct heads, and each in the order of the days of the month, so that an inspection of the columns opposite to each Satellite is necessary to determine what phenomena will happen on a given day.

An asterisk annexed to the day of the month, signifies that the phenomenon is visible at Greenwich, and a dagger, that the phenomenon *may be* visible under

unfavourable circumstances, the limits in either case being the same as those adopted for the eclipses.

In the month of August, 1842, under the general heading "Occultations," opposite to Satellite I, and under Immersion, the first quantity recorded is $1^d 16^h 23^m$, which signifies that at $16^h 23^m$ sidereal time on August the 1st an Immersion of the 1st Satellite takes place, but that it is invisible at Greenwich. Under Emersion we find, for the whole of the month, "In the shadow," which signifies that the Emersion of the Satellite cannot be seen, because, although it ceases to be occulted by the body of the Planet, it is still involved in its shadow, from which it does not indeed escape until $19^h 13^m 13^s.8$ sidereal time. (See Eclipses of the Satellites of Jupiter on the preceding page of the month.) Again, in the column of Occultations opposite to Satellite III, it appears that the 3rd Satellite is occulted on the 25th day of the month; that it disappears behind the disc of the Planet at $3^h 39^m$, reappears at $7^h 7^m$, Sidereal time; but that both Immersion and Emersion are invisible at Greenwich.

In the column headed Transits of Satellites, the first transit of Satellite I. at Greenwich appears to be on the 2nd day, when the Ingress takes place at $13^h 37^m$, and the egress at $15^h 56^m$, Sidereal time; that is, it comes in contact with Jupiter's disc at $13^h 37^m$, remains on the disc $2^h 19^m$, and quits it again at $15^h 56^m$, sidereal time; both ingress and egress are invisible at Greenwich.

The Transits of Shadows are to be interpreted in a similar manner.

Page XXII. of each Month.

1. *Logarithms of A, B, C, D, for correcting the Places of the Fixed Stars.*

In the formulæ which express the relation of the apparent place of a Star to its mean place, and reciprocally, there are certain factors which are independent altogether of the Star's place, and are therefore common to all Stars. These factors depend upon the longitudes of the Sun, Moon, and Moon's ascending Node.

The Logarithms here given are the logarithms of these independent factors, conveniently arranged for incorporation with other terms depending upon each particular Star, according to the method recommended by Professor Bessel. They have been computed for Mean Midnight at Greenwich, according to the formulæ exhibited at page 435, omitting in C and D the terms depending on ϵ .

In the form under which they now appear, they are chiefly used in conjunction with the Astronomical Society's Tables,* which contain the Logarithms of the remaining factors depending on the Star's place; and for the reduction of any Star in that Catalogue, they appear to afford every facility that can be desired.

Where, however, the apparent place of any Star, not in the *Astronomical Society's Catalogue*, is required, similar quantities to those must either be computed with reference to the particular Star, before we can use the A, B, C, D, or recourse must be had to other and independent means; such, for instance, as are afforded by the Table at pages 436 and 437, which serves equally for all Stars. The formulæ by which this Table has been constructed are given at page 435.

The following Examples will sufficiently illustrate the mode of using both Tables.

* "New Tables for facilitating the Computation of Precession, Aberration, and Nutation of 2881 Principal Fixed Stars, together with a Catalogue of the same, reduced to January 1, 1830. Computed at the Expense and under the Direction of the Astronomical Society of London. To which is prefixed an Introduction, explanatory of their Construction and Application. By Francis Baily, Esq." London, 1827. 4to.

EXPLANATION.

Required the Correction ($\Delta \alpha$) of the Right Ascension and ($\Delta \delta$) of the Declination of γ Orionis (No. 648, *Ast. Soc. Cat.*), for Precession, Aberration, and Nutation, at Greenwich Mean Midnight, on February 5, 1842.

1.—By the Astronomical Society's Constants and the Logarithms of A, B, C, D.

Mean α , Jan. 1, 1830	- - 5 16 1'00	Mean δ	- - - - + 6 11 17'10
Twelve Years Precession	- + 38'52	Twelve Years Precession	+ 45'88
Mean α , Jan. 1, 1842	- - 5 16 39'52	Mean δ	- - - - + 6 12 2'98

	Logarithms.	Nat. Nos.		Logarithms.	Nat. Nos.
a	- + 8'1069		a'	- + 9'5119	
A	- - - 1'1344		A	- - - 1'1344	
aA	- - - 9'2413	- - - 0'174	$a'A$	- - - 0'6463	- - - 4'429
b	- + 8'8184		b'	- + 8'3130	
B	- + 1'1437		B	- + 1'1437	
bB	- + 9'9621	- - - + 0'916	$b'B$	- + 9'4567	- - - + 0'286
c	- + 0'5065		c'	- + 0'5824	
C	- + 9'6223		C	- + 9'6223	
cC	- + 0'1288	- - - + 1'345	$c'C$	- + 0'2047	- - - + 1'602
d	- + 7'1395		d'	- - - 9'9920	
D	- - - 0'6599		D	- - - 0'6599	
dD	- - - 7'7994	- - - 0'006	$d'D$	- + 0'6519	- - - + 4'486
		$\Delta \alpha = + 2'081$			$\Delta \delta = + 1'945$

2.—By the independent Constants.

For February 5, 1842, the Table at pages 436, 437, furnishes

$f = + 19'29$; $g = + 9'56$; $G = 331'27$; $h = + 19'48$; $H = 315'37$; $i = - 5'91$.
 α (in time) converted = 79 10 - - - - - 79 10
 $G + \alpha = 50 37$ $H + \alpha = 34 47$

	Logarithms.	Nat. Nos.		Logarithms.	Nat. Nos.
f	- - - - -	+ 19'29			
g	- + 0'9805			- + 0'9805	
$\sin(G + \alpha)$	+ 9'8881		\cos	+ 9'8024	
$\tan \delta$	+ 9'0360			+ 0'7829	- - - + 6'07
	+ 9'9046	- - - + 0'80			
h	- + 1'2896			+ 1'2896	
$\sin(H + \alpha)$	+ 9'7562		\cos	+ 9'9145	
$\sec \delta$	+ 0'0025		\sin	+ 9'0335	
	+ 1'0483	- - - + 11'18		+ 0'2376	- - - + 1'73
		$\Delta \alpha$ (in arc) = + 31'27			
		$\Delta \alpha$ (in time) = + 2'08	i	- - - 0'7716	
			$\cos \delta$	+ 9'9975	
				- 0'7691	- - - - 5'88
					$\Delta \delta = + 1'92$

Hence the App. Right Ascens. of γ Orionis = 5 16 39'52 + 2'08 = 5 16 41'60
 And the Apparent Declination = + 6 12 2'98 + 1'92 = + 6 12 4'90

2. Mean Time of Transit of the First Point of Aries.

The time in this column shows the distance of the *mean* Sun from the meridian, at the instant when the *true* point of intersection of the ecliptic and equator (called the first point of Aries) is on the meridian of Greenwich; and as the distance of the first point of Aries from the meridian, at the instant the mean Sun is on the meridian, is denominated Sidereal Time at Mean Noon, this may, by analogy, be termed the *Mean Time at Sidereal Noon*. It is the time which ought to be shown by a mean time clock adjusted to the Greenwich meridian, at the moment that a clock, adjusted to sidereal time, indicates exactly $0^{\text{h}} 0^{\text{m}} 0^{\text{s}}$. The use of this column is to facilitate the reduction of sidereal to mean solar time, with the help of the Table of Time Equivalents, given at pages 562 and 563, of this volume, as has been already explained at page 574.

3. Mean Equinoctial Time.

Mean Equinoctial Time signifies the Mean Time elapsed since the instant of the Mean Vernal Equinox. The numbers in this column represent this time, at every Mean Noon, in Mean Solar days and fractional parts of a day; it is reckoned from the Mean Vernal Equinox of 1841, between January 1 and March $22^{\text{d}} \cdot 432691$, but after March $22^{\text{d}} \cdot 432691$ from the Vernal Equinox of 1842; for the Equinoctial Year has been assumed, according to Bessel, (*Conn. des Temps*, 1831, Additions, page 154) equal to $365 \cdot 242217$ Mean Solar days; and as the Equinoctial Time corresponding to the Mean Noon of March 22, 1842, is $364^{\text{d}} \cdot 809526$, it is evident that the Equinoctial Year of 1841-42 was completed, and that a new year commenced, at $0^{\text{d}} \cdot 432691$ after Mean Noon of the 22nd.

The fraction of the day at the head of the column is common to all the days of the Equinoctial Year. Thus, at Mean Noon of January 19, 1842, the Equinoctial Time is $302^{\text{d}} \cdot 809526$, and on January 20 it is $303^{\text{d}} \cdot 809526$, and so on until March $22^{\text{d}} \cdot 432691$, when the year terminates, and the fractional part of the day changes. At Mean Noon of March 23, 1842, the Equinoctial Time is $0^{\text{d}} \cdot 567309$, and this fraction is to be annexed to all the numbers in the column of days, from the period of the change until the equinox of 1843.

At the instant the Mean Sun arrives at the Mean Vernal Equinox, it must also be on *some* meridian, and this meridian will then have its Equinoctial time corresponding with its Mean Solar time, each of which will be $0^{\text{h}} 0^{\text{m}} 0^{\text{s}}$, and they will continue to correspond throughout the Equinoctial Year. At the end of the Equinoctial Year, the Sun will have passed this meridian 365 times, and have performed, besides, a certain portion of its 366th diurnal revolution, viz. $0^{\text{d}} \cdot 242217$; it will, therefore, have arrived at some other meridian, which will now, in its turn, reckon the Mean Equinoctial and Mean Solar time from the same point, and remain constant for the year. Thus the meridian, from which the time is reckoned, is shifting its position at the end of every year by $0^{\text{d}} \cdot 242217$, or $5^{\text{h}} 48^{\text{m}} 47^{\text{s}} \cdot 55$, to the Westward. Between the Vernal Equinoxes of 1842 and 1843, this itinerant meridian corresponds to Longitude $0^{\text{d}} \cdot 567309$ East or $10^{\text{h}} 23^{\text{m}} 4^{\text{s}} \cdot 50$ West of Greenwich.

This species of time was first introduced in the Supplement to the Nautical Almanac for 1828, with a very full explanation of its nature and use. It there appears, that the use of Equinoctial Time is to afford an uniform date, which shall be independent of the different meridians, and of all inequalities in the Sun's motion, and shall thus save the necessity, when speaking of the time of any event's happening, of mentioning

at the same time the place where it was observed or computed. Thus, it is the same thing to say that a comet passed its perihelion on January 5, 1842, at $5^{\text{h}} 47^{\text{m}} 0^{\text{s}}$, Mean Time at Greenwich; at $5^{\text{h}} 56^{\text{m}} 21^{\text{s}}$, Mean Time at Paris; or at $1841^{\text{r}} 289^{\text{d}} 1^{\text{h}} 12^{\text{m}} 43^{\text{s}}$ Equinoctial Time; but the former dates make the localities of Greenwich and Paris enter as elements of the expression; whereas the latter expresses the period elapsed since an epoch common to all the world, and identifiable independently of all localities. By this means all ambiguities in the reckoning of time are supposed to be avoided.

To convert Mean Solar into Equinoctial Time: To the corresponding Greenwich Mean Time add the Equinoctial Time at Mean Noon of the same day at Greenwich: the sum will be the Equinoctial Time required. Thus, in the instance of the comet before alluded to, Paris being $9^{\text{m}} 21^{\text{s}}$ East of Greenwich, subtract this from the Paris time and we get $5^{\text{h}} 47^{\text{m}} 0^{\text{s}}$ for the corresponding Greenwich Time, to which add $288^{\text{d}} 809526$, or $288^{\text{d}} 19^{\text{h}} 25^{\text{m}} 43^{\text{s}}$, the Mean Equinoctial Time at Greenwich Mean Noon of January 5, and the sum will represent the Mean Equinoctial Time of the Comet's passage of its perihelion, viz. $289^{\text{d}} 1^{\text{h}} 12^{\text{m}} 43^{\text{s}}$, from the vernal equinox of the year 1841.

4. Day of the Year.

The numbers in this column indicate the complete days at mean noon which have elapsed since mean noon of January 1. Mean noon of January 1 is therefore reckoned 0, and 1 is found opposite to that of January 2, because at that instant one entire day has elapsed.

5. Fraction of the Year.

These fractions are the quotients found by dividing the numbers in the preceding column by 365.25. The day and fraction of the year are useful in many Astronomical calculations.

Obliquity of the Ecliptic. (Page 266.)

The apparent inclination of the plane of the Ecliptic to that of the Equator is here given for every 10th day of the year, and continued to January 6 of the following year, marked December 37 for the sake of convenience. This inclination is ever varying, as well from the effect of its mean diminution, as of the nutation of the earth's axis: it is an important element in deducing the positions of the heavenly bodies, with reference to either of the planes, when we know their positions with respect to the other; as, for instance, in computing Right Ascensions and Declinations from Longitudes and Latitudes, and *vice versâ*. If the apparent Obliquity be required for any date not to be found in the Table, it may be obtained by simply taking the proportional part of the variation of the obliquity corresponding to the interval which comprises the given date. Thus, the apparent Obliquity on August 23, 1842, is $23^{\circ} 27' 38''$.59. For the variation of the Obliquity in the ten days between August the 19th and the 29th, is $0''$.07, or $0''$.007 for one day, and this being multiplied by 4, the number of days between the 19th and the 23rd, gives $0''$.03, to be added to the Obliquity of August the 19th. For most purposes, however, the Obliquity corresponding to the date in the Table nearest to the given date is sufficient, as is evident from an inspection of the quantities.

Sun's Horizontal Parallax. (Page 266.)

The Sun's Horizontal Parallax is the *greatest* angle under which the equatorial semidiameter of the earth would appear at the Sun's centre. It varies inversely as the distance, and the numbers in this column show the values for every tenth day of the year.

The Parallax serves for reducing a Solar observation made at the surface of the earth to what it would have been if made at the centre.

Sun's Aberration. (Page 266.)

The progressive motion of light, combined with the motion of the Earth in its orbit, causes the Sun to appear in a different position from that which he really occupies, the true position being always in advance of the apparent. The numbers in this column indicate, for every 10th day of the year, the amount of Aberration, or the quantity to be applied to the *true* longitude of the Sun to obtain the *apparent* longitude. The longitudes derived from the Solar Tables include Aberration, and are therefore *apparent* longitudes, such as are contained in this Ephemeris. If the *true* longitude of the Sun be wanted, as is the case in finding the longitude of the Earth for the calculation of the Geocentric place of a body, the aberration must be applied with a contrary sign. Thus, on June 10, 1842, at Mean Noon, by *adding* $20''\cdot05$, the amount of aberration, to $79^{\circ} 7' 40''\cdot9$, the apparent longitude of the Sun, we obtain $79^{\circ} 8' 0''\cdot95$ for the true longitude.

Equation of the Equinoxes. (Page 266.)

The Solar and Planetary Tables furnish us with the places of the Heavenly Bodies referred to the Mean Equinox; but the true place of the Equinox at any time differs from its mean place, by a quantity which is termed the Equation of the Equinoxes; and the numbers here given show the value of the Equation for every 10th day of the year. They are to be applied, with their proper signs, to the Longitudes reckoned from the Mean Equinox, to obtain the values with respect to the True Equinox.

If the Longitude of a body be given with reference to the true Equinox, as in this Ephemeris, and it be required to find its Longitude reckoned from the Mean Equinox, the Equation of the Equinoxes must be applied with a contrary sign. Thus, the longitude of the Sun, reckoned from the true Equinox, on July 20, 1842, at Mean Noon, is $117^{\circ} 17' 1''\cdot1$, and the Equation of the Equinoxes is $+ 17''\cdot11$; therefore, applying it with the contrary sign, the difference $117^{\circ} 16' 43''\cdot99$ is the Sun's Longitude from the *Mean* Equinox on that day.

The Equation corresponding to any date not contained in the Table, may be obtained in the usual way by interpolation.

The Equation of the Equinoxes in Right Ascension, in a similar manner, enables us to find the *apparent* point of intersection of the Ecliptic on the Equator; and is necessary in computing Sidereal Time.

Mean Longitude of ζ 's ascending Node. (Page 266.)

This column contains the Mean Longitude of the Moon's ascending Node, at Mean Noon of every 10th day of the year, reckoned from the Mean Equinox. The place for any intermediate day is easily found from the daily motion inserted

at the foot of the column. The Longitude of the Node is necessary in the calculation of Nutation; it is also sometimes used to determine roughly the Stars which are likely to undergo occultation by the Moon.

Ephemeris of the Planets. (Pages 267 to 431.)

These pages contain the Geocentric and Heliocentric Places of the Planets, Mercury, Venus, Mars, Vesta, Juno, Pallas, Ceres, Jupiter, Saturn, and the Georgian.

The Geocentric Places are the places of the centres of the planets, as they would appear from the centre of the Earth; the Heliocentric, such as they would appear from the centre of the Sun.

The positions of the larger planets are given for Greenwich Mean Noon and the Time of Transit on every day of the year. But those of the minor Planets are given at Noon of every fourth day only, and, for the month preceding and following their Oppositions, at Time of Transit on each day. The Geocentric Right Ascensions and Heliocentric Longitudes, are reckoned from the True Equinox. The Geocentric Right Ascensions and Declinations are affected with aberration, and are therefore *apparent* positions.

By means of the positions of Venus, Mars, Jupiter, and Saturn, and particularly of Venus and Jupiter, which are frequently visible when the Sun is above the horizon, the Latitude, Time, and Variation of the Compass, may be found with nearly as much facility and accuracy as by the Sun.

The column headed "Meridian Passage" shows the Mean Time of the Planet's Transit over the meridian of Greenwich, and serves to find the Mean Time of Transit over any other meridian. As in the instance of the Moon before noticed, there are some days on which the planets do not pass the meridian; these are indicated by two asterisks (* *). If we refer to page 276, we shall find that Mercury does not pass over the Greenwich meridian on May 11th, and for a similar reason, viz., that the planetary day is here longer than the mean solar day, and commences so near, but previously, to the noon of the 11th, viz. $0^m \cdot 7$, as to want still $4^m \cdot 1$ of its completion at the termination of the 11th day. The planetary day, therefore, includes the solar day of May 11th: it begins *before* the solar day and ends *after* it, and the planet cannot arrive at the meridian at any period of it.

Another phenomenon takes place in the case of the planets, which, however, does not occur with the Moon; it is that of two transits on the same day, which arises from the planetary day being sometimes *shorter* than the solar day, commencing *after* and terminating *before* the solar day, and thus falling entirely within it. This cannot be the case with the Moon, because the lunar day is always greater than the solar day. When two transits occur, the times of both are registered, as at page 280, July 8th, where it appears that Mercury passes the Greenwich meridian $5^m \cdot 3$ after Mean Noon of the 8th, and again at $23^h 58^m \cdot 7$ on the same day, or $1^m \cdot 3$ before the arrival of the following Mean Noon.

The positions of the planets for any time not given in the Ephemeris, and under any other meridian than that of Greenwich, are to be found by interpolation in the usual way. *Example:* Required the Right Ascension and Declination of Venus at 6^h Mean Time on June 15, 1842, in longitude 30° west of Greenwich; also the time of Venus' passage over this meridian on the same day. The difference of longitude 2^h added (because it is west) to the given time, gives 8^h for the corresponding Greenwich time.

1. *For the Right Ascension.* The Right Ascension on June 15 is $7^{\text{h}} 27^{\text{m}} 42^{\text{s}}.01$, and on June 16 it is $7^{\text{h}} 32^{\text{m}} 55^{\text{s}}.23$; the difference $5^{\text{m}} 13^{\text{s}}.22$ is the variation of the Right Ascension in 24 mean hours; therefore, $24^{\text{h}} : 5^{\text{m}} 13^{\text{s}}.22 :: 8^{\text{h}} : 1^{\text{m}} 44^{\text{s}}.41$, the proportional part of the variation answering to 8^{h} ; and this proportional part added (because the Right Ascensions are increasing) to $7^{\text{h}} 27^{\text{m}} 42^{\text{s}}.01$, the Right Ascension at mean noon on June 15, gives $7^{\text{h}} 29^{\text{m}} 26^{\text{s}}.42$ for the Right Ascension required.

2. *For the Declination.* The Declination on June 15 is N. $23^{\circ} 31' 56''.6$, and on the 16th it is N. $23^{\circ} 21' 56''.9$, the difference, $9' 59''.7$, is the variation in 24 hours; and the proportional part of this variation for 8^{h} is $3' 19''.9$, which, subtracted from the Declination at noon on the 15th, gives N. $23^{\circ} 28' 36''.7$ for the Declination required.

3. *For the Meridian Passage.* Take the difference of the times of two consecutive transits; and considering this difference as an acceleration or retardation of the Meridian Passage while the planet has passed over 24^{h} of geographical longitude, take the proportional part of it, due to the difference of meridians, for a correction to be applied to the Meridian Passage at Greenwich, bearing in mind that in east longitudes the passage precedes that at Greenwich, when times are accelerated, and follows it, when they are retarded; and the contrary in west longitudes. In the present case Venus passes the meridian of Greenwich on June 15 at $1^{\text{h}} 54^{\text{m}}.4$, and on June 16 at $1^{\text{h}} 55^{\text{m}}.7$; the difference is $1^{\text{m}}.3$, therefore $24^{\text{h}} : 1^{\text{m}}.3 :: 2^{\text{h}} : 0^{\text{m}}.1$, the proportional part to be added to $1^{\text{h}} 54^{\text{m}}.4$, (because the passages are accelerated, and the longitude is west of Greenwich,) which gives $1^{\text{h}} 54^{\text{m}}.5$, mean time at the given place, for the Meridian Passage. Where great accuracy is not required, as in predicting the time of passage, in order to be prepared for observing the altitude of the planet on the meridian, for the determination of the latitude, this method will suffice.

The Right Ascension and Declination at Transit over the Meridian at Greenwich, are readily reduced to the time of transit over any other meridian not far distant, by means of their Variations in 1 hour of Longitude. Thus: prefix the sign — to the Longitude of the proposed meridian if it be east of Greenwich, but + if it be west, and multiply it by the variation; the product applied *algebraically* (South Declination being considered as negative) to the transit results for Greenwich, will give those for the proposed meridian. *Example*: Suppose the Right Ascension and Declination of Mars were required at Vienna on January 23rd, 1842. Vienna is east of Greenwich $1^{\text{h}} 5^{\text{m}} 31^{\text{s}}.9$, or $-1^{\text{h}}.092$, and the "Variation of Right Ascension in 1 hour of Longitude" on January 23rd is $+7^{\text{s}}.13$: the product of these numbers is $-7^{\text{s}}.79$, which, applied to $22^{\text{h}} 59^{\text{m}} 32^{\text{s}}.64$, the Transit Right Ascension at Greenwich, gives $22^{\text{h}} 59^{\text{m}} 24^{\text{s}}.85$ for that at Vienna. The Variation of the Declination on January 23rd is $+46''.3$, and the product of $+46''.3$ and $-1^{\text{h}}.092$ is $-50''.6$, which, applied to S. or $-7^{\circ} 19' 32''.2$, gives S. $7^{\circ} 20' 22''.8$ for the Declination at Vienna.

The "Sid. Time of Sem. pass. Mer." serves to reduce an observation of the Right Ascension of the limb, to that of the centre, and the "Semidiameter" answers a similar purpose for the Declination.

The "Hor. Par.," or Horizontal Parallax, serves for reducing an observation made at the surface to the centre of the Earth.

Fixed Stars. (Pages 432 to 479.)

In pages 432 to 434 are given the mean Right Ascensions and Declinations of 100 principal fixed Stars for Jan. 1, 1842, together with their Annual Variations.

The *standard* Stars are distinguished by capital letters; North Declination by N. and South Declination by S.

The sign + prefixed to an Annual Variation of Right Ascension indicates that the variation is to be *added to*, and the sign —, that it is to be *subtracted from*, the Right Ascension: also, for Stars having *North* Declination, + signifies *add*, and — *subtract*: but for Stars of *South* Declination, + denotes that the Variation is to be *subtracted from*, and — that it is to be *added to*, the Declination.

Example 1. Required the Mean Right Ascension and Declination of α TAURI or *Aldebaran* on May 31, 1842. The Annual Variation of the Right Ascension is + 3^m 42⁷⁰; the Fraction of the year corresponding to May 31, is .411 (page XXII. of May); the product of these numbers (1^m 408) is the proportional part of the annual variation due to the period elapsed since January 1, which *added*, because the sign is +, to the Mean Right Ascension on Jan. 1, *viz.*, 4^h 26^m 51^s 703, gives 4^h 26^m 53^s 111, for the Mean Right Ascension on May 31. The Annual Variation of the Declination is + 7^m 926, which multiplied by .411 as before, and the product (3^m 26) *added*, because the sign is + and the Declination *North*, to the Mean Declination on Jan. 1, 1842, *viz.* N. 16° 11' 10^s 52, gives N. 16° 11' 13^s 78, for the Mean Declination required.

Example 2. Required the Mean Right Ascension and Declination of β URSAE MINORIS on June 2, 1842. Here the Annual Variation of Right Ascension is — 0^m 2734, and the fraction of the Year .416 (page XXII. of June); the product (0^m 114) therefore being *subtracted*, because the sign of the Annual Variation is —, from 14^h 51^m 14^s 406, the Right Ascension on Jan. 1, gives 14^h 51^m 14^s 292, for the Right Ascension on June 2, 1842.

For the Declination, we have the Annual Variation = — 14^m 713, which, multiplied by .416, gives 6^m 12. The Declination being *North*, and the sign of the Variation —, this product must be *subtracted* from N. 74° 48' 3^s 86, and the result is N. 74° 47' 57^s 74.

Example 3. Required the Mean Declination of α SCORPII or *Antares* on May 31, 1842. The Annual Variation is — 8^m 495, and the fraction of the Year .411; the product of these numbers (3^m 49) being *added*, because the Declination is *South*, and the sign of the Variation —, to the Declination on Jan. 1, *viz.* S. 26° 4' 30^s 03, the sum, S. 26° 4' 33^s 52 is the Declination on May 31, 1842.

Next (page 435) follow Bessel's Formulæ of Reduction; and (pages 436 and 437) a Table for the Reduction of Stars, independently of the Astronomical Society's Constants, an example of which is given at page 584.

The apparent places of α and δ URSAE MINORIS are given for every day of the year, and those of the remaining 98 Stars for every *tenth* day. They indicate the position which ought to be shown by perfect instruments at the time of the Star's transit over the meridian of Greenwich; and, therefore, supposing the catalogue of mean places to be correct, they serve to detect any errors of the instruments.

The hours and minutes of Right Ascension, and the degrees and minutes of Declination, are placed at the heads of the columns as constants, and belong equally to all the numbers below them. This arrangement has rendered it necessary, in numerous instances, to continue the seconds beyond 60, as the width of the page

would not permit of otherwise indicating any change in the minutes. Thus, the apparent Right Ascension of 51 (Hev.) Cephei, at page 452, on December 17, 1842, is registered $6^{\text{h}} 24^{\text{m}} 94^{\text{s}}.93$, and is to be read $6^{\text{h}} 25^{\text{m}} 34^{\text{s}}.93$. Again, the Declination of α CORONÆ BOREALIS (page 463), on August 19, is registered N. $27^{\circ} 14' 60''.9$, which signifies N. $27^{\circ} 15' 0''.9$.

The small figures on the right hand of the vertical columns of seconds represent the differences of the quantities above and below them on the left, or the variation of Right Ascension and Declination in 10 days, and serve to find, by interpolation, the values for any intermediate day. As in the case of the Planets before explained, a Star will sometimes arrive at the meridian twice in one Mean Solar day. Wherever this occurs, an asterisk is placed opposite to the interval, and it signifies that the Star has passed the meridian 11 times in the 10 Mean Solar days, and consequently that the Right Ascension or Declination on any intermediate day is to be determined in these particular instances by taking $\frac{1}{11}$ th part, instead of $\frac{1}{10}$ th, for the daily variation in the interval. Thus, at page 450, we find in the instance of ϵ ORIONIS, an asterisk opposite the interval between June 10 and 20, and a difference of $0^{\text{m}} 18$ opposite to the interval between the seconds belonging to those dates; we therefore infer that 11 transits have taken place, and that the daily variation of the Right Ascension is $0^{\text{m}} 018$.

When extreme accuracy is required, the apparent places of the 5 Polar Stars demand a further correction, depending on the terms which involve $\delta \zeta$. The apparent places do not include these corrections, on account of the rapid variation of the argument, viz. about 26° in a day, but they are given in a Table at pages 478, 479, for every degree of the Moon's Longitude, and may be readily applied, agreeably to the precept at the foot of that Table.

Formulae for correcting for daily aberration are given in the Preface.

Moon-Culminating Stars. (Pages 480 to 521.)

Those Stars are denominated Moon-Culminating Stars, which being near the Moon's parallel of Declination, and not differing much from her in Right Ascension, are proper to be observed with the Moon, in order to determine differences of meridians. This is effected by comparing the differences of the observed Right Ascensions of such a Star and the Moon's bright limb at any two meridians. If the Moon had no motion, the difference of her Right Ascension from that of the Star would be constant at all meridians; but in the interval of her transit over two different meridians, her Right Ascension will have varied, and the difference between the two compared differences will exhibit the amount of this variation, which added to the difference of the meridians shows the angle through which the westerly meridian must revolve before it comes up with the Moon; hence, and knowing the rate of her increase in Right Ascension, the difference of longitude may be easily obtained.

For the determination of this variation, recourse has hitherto been had to actual observations made at different meridians, because any errors in the computed places of the Moon and Stars are thereby avoided; and the places were hitherto given merely with the view of indicating the times when the observations were to be made. In the present List, however, the Right Ascensions are given with every possible degree of accuracy, so that they may be considered, at least approximately, in the light of corresponding observations made at Greenwich, and be taken to represent the indications of the Greenwich instruments, the same as though they had been actually observed. The traveler has thus an opportunity of scattering his

observations immediately available for determining his longitude with considerable accuracy.

The *Right Ascension of the Moon's bright limb* and *Declination of her centre*, at the instant of their respective transits at Greenwich, are given for the lower as well as the upper Culmination, *L.* being put to denote the Lower Culmination, and *U.* the Upper Culmination; the Roman numerals indicate the limb of the Moon with reference to its transit over the meridian. The Moon's age at the time of her upper transit, to the nearest tenth of a day, is inserted in the column containing the Magnitudes of the Stars.

The numbers in the column "Var. of ζ 's R. A. in 1 hour of Long." represent the Variation in Right Ascension of the Moon's Limb during the interval of her transit over two meridians, equidistant from that of Greenwich, and one hour distant from each other. They have been deduced from the Right Ascensions of the *bright limb*, and therefore include the effect produced by the change of the semidiameter. They serve to determine the Longitude where the difference of meridians is not very great; but where this difference is considerable, and extreme accuracy is wanted, that variation in Right Ascension should be used which corresponds to the middle of the interval between the observations, which may be readily obtained by interpolation. They also serve to determine the Right Ascension of the bright limb at its transit over any other meridian. Thus: Multiply the difference of longitude between Greenwich and the given meridian, by the variation; and, according as the given meridian is east or west of Greenwich, subtract or add the product to the Right Ascension at Greenwich; the result will be the Right Ascension of the bright limb at transit over the proposed meridian. *Example:* On May 4, 1842, the Right Ascension of the Moon's second limb is $22^{\text{h}} 59^{\text{m}} 21^{\text{s}}.06$, at its upper transit at Greenwich, and the variation for one hour of longitude is $110^{\text{s}}.59$: Required the Right Ascension of the limb at its upper transit at Paris. Paris is $9^{\text{m}} 21^{\text{s}}.5$, or $0^{\text{h}}.156$, East of Greenwich; therefore, multiplying $110^{\text{s}}.59$ by 0.156 , and subtracting the product $17^{\text{s}}.25$ from $22^{\text{h}} 59^{\text{m}} 21^{\text{s}}.06$, we have $22^{\text{h}} 59^{\text{m}} 3^{\text{s}}.81$, for the Right Ascension at Paris.

In a similar manner the Declination may be determined at transit over any other Meridian not far distant from that of Greenwich, bearing in mind that South Declinations and East Longitudes are to be considered as *negative*. Thus, in the above *Example:* The Moon's Declination at her upper Transit at Greenwich is $S. 2^{\circ} 17' 49''.1$, and the "Var. of ζ 's Dec. in 1 hour of Long." $+ 800''.7$, which, multiplied by $- 0^{\text{h}}.156$, gives $- 2' 4''.9$, to be added to S. or $- 2^{\circ} 17' 49''.1$; the Declination at the upper transit at Paris is therefore $S. 2^{\circ} 19' 54''.0$.

Where an asterisk is placed opposite to a Star's name, it is intended to denote that the Star is favourably situated for observing its Declination along with that of the Moon in both hemispheres, with a view to the accurate determination of the Moon's Parallax.

The numbers in the column entitled "Sid. Time of ζ 's Sem. pass. mer.," express the Sidereal intervals which the Moon's Semidiameter, at the time of transit at Greenwich, takes in passing the meridian, and therefore serve to determine the Transit of the centre from an observed Transit of either limb.

Occultations. (Pages 522 to 524.)

These pages contain a list of the Planets and Fixed Stars to the sixth magnitude inclusive, the Occultations of which by the Moon will happen when the objects are

above the horizon of Greenwich, together with the Sidereal and Mean Times of the Immersions and Emerisions, and the points on the circumference of the Moon's image, where the Star, viewed with a telescope that inverts, will disappear and reappear. By "Angle from N. Point" is to be understood the arc included between the Star, when in contact, and the point of intersection of the limb with a circle passing through the North Pole and the centre of the Moon's image; and by "Angle from Vertex," the arc between the Star at contact and the point where a circle, passing through the zenith and the Moon's centre, intersects the limb; the angles in all cases being reckoned towards the right hand round the circumference of the Moon's image, as seen in an inverting telescope. These latter angles will be found very useful in observing Occultations of small stars with a telescope not mounted equatorially; and, for the observation of an Emersion, a knowledge of the angle is absolutely necessary to enable the observer to direct his attention to the point of the Moon's limb where the Star will reappear. In some instances, Occultations have been inserted which taking place in, or near to, the horizon of Greenwich, are not visible there, but may be visible at places not far distant from Greenwich.

Elements for facilitating the Computation of Occultations of certain Stars by the Moon.
(Pages 525 to 534.)

These pages contain, 1. The *Apparent* places, at Greenwich Mean Midnight, of the Fixed Stars to the sixth magnitude inclusive, the occultations of which will take place above the horizon at Greenwich.

2. The *Apparent* Places of those Planets and *all* Stars to the fifth magnitude inclusive, the occultations of which will be visible at *some* part of the Earth.

3. The Greenwich Mean Time at which the Moon would, if viewed from the centre of the Earth, appear to have the same Right Ascension as the Star.

4. The difference of Declination and Position of the Moon, as it would appear with respect to the Star at the instant of Conjunction in Right Ascension.

5. The Parallels of Latitude *beyond* which the Star cannot be occulted by the Moon.

These Elements are useful in the calculation of an Occultation, for being referable to the Moon and Star, as seen from the centre of the Earth, they are independent of geographical position, and serve equally for all places. It is only necessary to apply the difference of longitude from Greenwich to the Greenwich Mean Time of conjunction, to find the time of conjunction at any other meridian; and it is this time to which the positions of the Moon and Star here given will equally correspond.

Thus, the position of the Moon and ϵ Geminarum, on March 20, 1842, at 2^h 4^m 24^s, Mean Time at Greenwich, is the position at 2^h 14^m 0^s 3 Mean Time at Paris, because Paris is 9^m 21^s 3 east of Greenwich.

By *Limiting Parallels* are to be understood those parallels of latitude beyond which an occultation cannot possibly occur.

Suppose an observer situate at a star, and having the Moon between him and the Earth, and that he could see the Moon projected on the Earth's disc; he would observe it moving across the disc from west to east, covering a zone whose breadth would be equal to the apparent diameter of the Moon. Now, it is only within the limits of this zone that the Occultation of a Star by the Moon can take place. To all the places through which the boundary lines pass, the Star will appear just to touch the Moon's limb; and that projected parallel of latitude, in which one of the boundary

lines is a tangent, is one of the limiting parallels, while the intersection of the other boundary line with the circumference of the Earth's disc determines the other limiting parallel.

Limiting Parallels are useful to indicate whether at a given conjunction of a Star with the Moon, the positions are likely to produce an occultation in a given latitude, and thus to save considerable labour to the computer.

Thus, suppose from the times of conjunction in the month of January, at page 525 it were required to prepare a list of Occultations for Greenwich, whose latitude is $51^{\circ} 28' 39''$ N. On looking down the column of Limiting Parallels we reject at once the first star, because the Limiting Parallels do not comprise the parallel of Greenwich. On Jan. 1, we see that ρ^4 Leonis may be occulted to all the parallels of latitude between 90 N. and 3 N., which include that of Greenwich; this Star would therefore be fixed upon for calculation, the time of conjunction, as regards sun-light, being also favourable. We observe, however, on reference to page 522, that a near approach, only, of this star is visible at Greenwich. The next Limiting Parallels having Greenwich between them, are 65 N. and 12 N., opposite to b Scorpii, on January 6, but the time of conjunction in this instance, as regards sun-light, is unfavourable, and the same remark will apply to τ Scorpii on January 7. On January 21 we see that η Tauri may be occulted to all the parallels of latitude between 90 N. and 12 N., and the time as regards sun-light is favourable; if, therefore, on further inquiry, the Star be found to be above the horizon of Greenwich, we should commence the calculation. It will appear on reference to page 522, that the occultation of this star is visible at Greenwich. On November 7, JUPITER may be occulted between the parallels of 67 N. and 12 N.; and on reference to page 523, we see that the phenomenon is visible at Greenwich.

Phenomena. (Pages 535 to 549.)

Pages 535 to 544 contain all the particulars necessary for indicating the times, places, &c., on the Earth where the Eclipses of the Sun and Moon will be visible; also the Elements which have been used in the calculations.

On pages 545 to 549 are given the conjunctions in Right Ascension of the Planets with the Moon, with each other, and with certain Stars; also the times when the Planets are in those parts of their orbits most favourable for observation, with a view to the more accurate determination of their elements; and other notices, chiefly of use to the astronomer.

Saturn's Ring. (Page 550.)

On this page are given the quantities which enable us to determine the position of the Ring of Saturn, at intervals of 40 days throughout the year, and whether it be visible or not. The value of p shows the position of the minor axis of the Ring with respect to a circle of declination, those of a and b the Ring's apparent magnitude, and a comparison of those of l and l' its visibility or otherwise. For the plane of the Ring to be *visible*, it is necessary that the Sun and the Earth should be elevated on the same side of it, which is the case during the whole of 1842. The circumstances which determine the *invisibility* of the Ring are, 1st, when its plane passes through the centre of the Sun, or $l' = 0$; 2nd, when it passes through the centre of the Earth, or $l = 0$, and at this time b also $= 0$; 3rd, when the Sun and Earth are on different sides of the plane of the Ring, for the Earth in this case will have the unilluminated side of the Ring turned towards it.

Phases. (Page 551.)

This page contains two Tables, the first showing the *Mean Time of the greatest Libration of the Moon's Apparent Disc*; and the second, the *Illuminated portion of the Discs of Venus and Mars* at the middle of each month.

Tides. (Pages 552 to 555.)

The Mean Time of High Water at London Bridge is here given for every day of the year, on the assumption that the time of high water on full and change days, or the *Establishment of the Port*, is $2^h 7^m$. The first high tide which happens after Mean Noon of any day is inserted in the 1st column, and the second in the 2nd column. Where a line (—) is inserted, it indicates that there is only *one* high tide on that day. Thus on January 8 there is only one high tide: it occurs at $12^h 15^m$, but the succeeding high tide does not take place until 44^m after mean noon of January 9.

The times of high water at full and change of the Moon, as given at pages 554 and 555, are reckoned from *Apparent Noon*: They represent the *Establishments of the Ports*, that is, the *actual times of High Water when the Moon passes the meridian at the same time as the Sun*; or the *intervals between the times of Transit of the Moon and the times of High Water on full and change days*. They serve to determine the time of high water on any other day at those places in the usual manner. The time of high water, however, at any of the places contained in this table, may be deduced for every day from the time of high water at London Bridge, by taking the difference between the *establishment of the port* at each of these places, and the *establishment of the port* at London Bridge, viz. $2^h 7^m$, and considering this as a constant quantity, representing the difference of the tides between London Bridge and the place, to be *added to*, or *subtracted from*, London Bridge tides, according as the establishment of the port at the place is *later* or *earlier* than that at London Bridge. Thus the establishment of the port at Aberdeen Bar is $1^h 11^m$, and at London Bridge $2^h 7^m$; the difference is $0^h 56^m$, and the Aberdeen tide precedes that at London: therefore, by *subtracting* $0^h 56^m$ from the London Bridge tides, we obtain the Aberdeen tides in *mean time*. On February 24, 1842, the first high water at London Bridge occurs at $1^h 34^m$, which being diminished by $0^h 56^m$, gives $0^h 38^m$ for the corresponding tide at Aberdeen, and so for other places.

Table showing the Correction required on account of Second Differences in finding the Greenwich Time corresponding to a reduced Lunar Distance. (Page 556.)

The use of this Table has been sufficiently explained, by the Examples given at page 579.

Tables for determining the Latitude by Observations of the Pole Star out of the Meridian. (Pages 557 to 559.)

These Tables serve to determine the Latitude from an observation of the Altitude of the Pole Star out of the Meridian. The method of using them is as follows:

From the observed altitude, when corrected for the error of the instrument, refraction, and dip of the horizon, subtract $1'$.

Reduce the Mean Time of Observation at the place to the corresponding Sidereal Time, by the Table given at page 548. (See Tables of Time Equivalents, beginning this article.)

With the Sidereal Time found, take out the *first correction*, with its proper sign. If the sign be +, the correction must be *added* to the reduced altitude; but if it be —, it must be *subtracted*: in either case the result will give an Approximate Latitude.

With this Approximate Latitude and the Sidereal Time of observation, take out the *second correction*, and with the day of the month and the same Sidereal time, take out the *third correction*. These two corrections *added* to the Approximate Latitude, will give the Latitude of the place.

Example: On March 6, 1842, in Longitude 37° W. at 7^h 43^m 35^s Mean Time, suppose the altitude of the Pole Star, when corrected for the error of the instrument, refraction, and dip of the horizon, to be 46° 17' 28": Required the latitude.

Mean Time - - - - -	7 ^h 43 ^m 35 ^s
Diff. Long. (37°) in time - - -	2 28 0
Greenwich Mean Time - - -	10 11 35
Sidereal Time at Greenwich Mean Noon -	22 55 14
Mean Time at Place - - - - -	7 43 35
Acceleration (Tab. page 560) for 10 ^h 12 ^m	1 41
Sidereal Time of Observation - - - -	6 40 30
Corrected Altitude - - - - -	46 ^o 17' 28"
Subtract - - - - -	1 0
Reduced Altitude - - - - -	46 16 28
With Argument 6 ^h 40 ^m 30 ^s } First Correction	- 0. 18 59
Approximate Latitude - - - - -	46 7 29
Arguments, 46 ^o 7' } Second Correction	+ 1 16
6 ^h 41 ^m }	
Arguments, March 6, 1842. } Third Correction	+ 1 23
6 ^h 41 ^m }	
Latitude of the place - - N.	46 10 8

which agrees with an actual trigonometrical computation.

The *Tables of Time Equivalents*, given at pages 560 to 563, are useful for converting Mean Time into Sidereal Time, and Sidereal into Mean Time, agreeably to the example annexed to each table. They will serve also for Tables of Acceleration and Retardation, by taking the difference between each argument and its equivalent. Thus, in the Table at pages 560 and 561, the *excess* of the sidereal time equivalents above the arguments of mean time show the *acceleration* of sidereal on mean solar intervals; and in the Table at pages 562 and 563, the *defect* of the mean time equivalents, as compared with the arguments of sidereal time, indicate the *retardation* of mean on sidereal intervals.

The concluding Table, at pages 564 to 568, contains the *Latitudes and Longitudes of the principal Observatories*. This Table has already been considerably improved, and will, it is hoped, be gradually perfected by communications from each astronomer, of the latest and most accurate determination of his geographical position.

EPHEMERIS
OF
ENCKE'S COMET,
1838-9.

EPHEMERIS OF ENCKE'S COMET.

AUGUST, 1838.

Day of the Month.	At Mean Midnight at Greenwich.						Meridian Passage.
	Apparent Geocentric Right Ascension.	Var. of R. A. in 1 hour.	Apparent Geocentric Declination.	Var. of Dec. in 1 hour.	Logarithm of Distance from the		
					Earth.	Sun.	
1	h m s 2 4 8.26	+2.325	+22 0 5.3	+27.91	0.2849570	.346277	h m s 17 22 5
2	2 5 3.88	2.308	22 11 17.8	28.11	.279833	.344358	17 19 5
3	2 5 59.06	2.290	22 22 35.3	28.32	.274651	.342422	17 16 5
4	2 6 53.80	2.271	22 33 57.9	28.54	.269409	.340470	17 13 8
5	2 7 48.09	2.253	22 45 25.9	28.77	.264107	.338499	17 10 8
6	2 8 41.91	2.233	22 56 59.4	29.00	.258742	.336510	17 7 8
7	2 9 35.26	2.212	23 8 38.7	29.25	.253315	.334504	17 4 7
8	2 10 28.10	2.191	23 20 24.0	29.50	.247825	.332479	17 1 7
9	2 11 20.43	2.169	23 32 15.7	29.77	.242269	.330435	16 58 6
10	2 12 12.21	2.146	23 44 13.6	30.04	.236648	.328373	16 55 5
11	2 13 3.44	2.123	23 56 18.3	30.32	.230960	.326290	16 52 5
12	2 13 54.09	2.098	24 8 29.9	30.62	.225204	.324188	16 49 4
13	2 14 44.13	2.072	24 20 48.8	30.93	.219379	.322067	16 46 3
14	2 15 33.54	2.045	24 33 15.0	31.24	.213483	.319926	16 43 2
15	2 16 22.30	2.018	24 45 49.0	31.57	.207517	.317764	16 40 0
16	2 17 10.37	1.988	24 58 31.2	31.91	.201477	.315581	16 36 9
17	2 17 57.72	1.958	25 11 21.5	32.26	.195363	.313377	16 33 7
18	2 18 44.33	1.927	25 24 20.5	32.63	.189175	.311151	16 30 6
19	2 19 30.17	1.894	25 37 28.6	33.01	.182910	.308905	16 27 4
20	2 20 15.23	1.861	25 50 46.0	33.41	.176568	.306635	16 24 2
21	2 20 59.46	1.826	26 4 13.3	33.83	.170147	.304343	16 21 0
22	2 21 42.84	1.790	26 17 50.6	34.25	.163645	.302028	16 17 8
23	2 22 25.34	1.752	26 31 38.5	34.71	.157062	.299689	16 14 6
24	2 23 6.92	1.713	26 45 37.5	35.18	.150396	.297327	16 11 3
25	2 23 47.55	1.673	26 59 48.0	35.67	.143646	.294941	16 8 1
26	2 24 27.19	1.632	27 14 10.5	36.18	.136810	.292530	16 4 8
27	2 25 5.83	1.589	27 28 45.6	36.71	.129886	.290093	16 1 5
28	2 25 43.41	1.544	27 43 33.9	37.27	.122871	.287633	15 58 2
29	2 26 19.89	1.497	27 58 35.8	37.85	.115766	.285146	15 54 8
30	2 26 55.21	1.449	28 13 52.1	38.46	.108567	.282632	15 51 5
31	2 27 29.36	1.398	28 29 23.4	39.10	.101273	.280090	15 48 1
32	2 28 2.27	+1.346	+28 45 10.4	+39.77	0.0938810	.277522	15 44 7

EPHEMERIS OF ENCKE'S COMET.

SEPTEMBER, 1838.

Day of the Month.	At Mean Midnight at Greenwich.						Meridian Passage.
	<i>Apparent Geocentric Right Ascension.</i>	Var. of R. A. in 1 hour.	<i>Apparent Geocentric Declination.</i>	Var. of Dec. in 1 hour.	Logarithm of Distance from the		
					Earth.	Sun.	
1	h m s 2 28 2·27	+1·346	° ' " ° +28 45 10·4	+39·77	0·093881	0·277522	h m 15 44·7
2	2 28 33·89	1·291	29 1 13·8	40·47	0·086389	0·274926	15 41·3
3	2 29 4·19	1·235	29 17 34·3	41·20	0·078797	0·272302	15 37·9
4	2 29 33·07	1·175	29 34 12·7	41·96	0·071100	0·269649	15 34·4
5	2 30 0·49	1·112	29 51 9·9	42·75	0·063296	0·266966	15 30·9
6	2 30 26·37	1·045	30 8 26·6	43·59	0·055384	0·264253	15 27·4
7	2 30 50·64	0·977	30 26 3 9	44·47	0·047359	0·261509	15 23·9
8	2 31 13·21	0·906	30 44 2·6	45·37	0·039221	0·258734	15 20·4
9	2 31 34·00	0·831	31 2 24·0	46·33	0·030967	0·255926	15 16·8
10	2 31 52·93	0·751	31 21 8·8	47·33	0·022592	0·253087	15 13·1
11	2 32 9·88	0·667	31 40 18·3	48·39	0·014094	0·250214	15 9·5
12	2 32 24·78	0·579	31 59 53·7	49·49	0·005473	0·247307	15 5·8
13	2 32 37·49	0·486	32 19 56·1	50·64	9·996723	0·244365	15 2·1
14	2 32 47·91	0·388	32 40 27·1	51·85	9·987842	0·241389	14 58·3
15	2 32 55·91	0·285	33 1 27·9	53·13	9·978827	0·238375	14 54·5
16	2 33 1·35	0·175	33 23 0·2	54·47	9·969675	0·235326	14 50·7
17	2 33 4·09	+0·059	33 45 5·5	55·88	9·960382	0·232239	14 46·8
18	2 33 3·97	-0·065	34 7 45·5	57·36	9·950944	0·229113	14 42·8
19	2 33 0·83	0·191	34 31 2·1	58·92	9·941360	0·225948	14 38·8
20	2 32 54·52	0·328	34 54 57·3	60·57	9·931624	0·222742	14 34·8
21	2 32 44·80	0·473	35 19 33·0	62·30	9·921732	0·219496	14 30·7
22	2 32 31·49	0·627	35 44 51·7	64·13	9·911682	0·216208	14 26·5
23	2 32 14·37	0·791	36 10 55·5	66·06	9·901468	0·212876	14 22·3
24	2 31 53·19	0·965	36 37 47·1	68·11	8·891086	0·209501	14 18·0
25	2 31 27·65	1·152	37 5 29·1	70·26	8·880533	0·206081	14 13·6
26	2 30 57·47	1·353	37 34 4·6	72·55	8·869803	0·202615	14 9·2
27	2 30 22·28	1·567	38 3 36·8	74·97	8·858891	0·199102	14 4·7
28	2 29 41·77	1·796	38 34 8·9	77·53	8·847794	0·195540	14 0·1
29	2 28 55·55	2·042	39 5 44·2	80·23	8·836505	0·191929	13 55·4
30	2 28 3·14	2·310	39 38 26·9	83·13	8·825019	0·188267	13 50·6
31	2 27 4·03	-2·601	+40 12 20·9	+86·16	9·813332	0·184554	13 45·6

EPHEMERIS OF ENCKE'S COMET.

OCTOBER, 1838.

Day of the Month.	At Mean Midnight at Greenwich.						Meridian Passage
	Apparent Geocentric Right Ascension.	Var. of R. A. in 1 hour.	Apparent Geocentric Declination.	Var. of Dec. in 1 hour.	Logarithm of Distance from the		
					Earth.	Sun.	
1	2 27 4 ^o 03	- 2 ^o 601	+ 40 12 20 ^o 9	+ 86 ^o 169	8133320	181554	13 45 ^m 6
2	2 25 57 ^o 57	2 ^o 919	40 47 30 ^o 4	89 ^o 41	801436	180787	13 40 ^m 6
3	2 24 43 ^o 14	3 ^o 265	41 24 0 ^o 1	92 ^o 84	789328	176966	13 35 ^m 4
4	2 23 20 ^o 01	3 ^o 642	42 1 54 ^o 7	96 ^o 48	777001	173088	13 30 ^m 2
5	2 21 47 ^o 34	4 ^o 058	42 41 19 ^o 3	100 ^o 34	764432	169152	13 24 ^m 6
6	2 20 4 ^o 15	4 ^o 516	43 22 19 ^o 4	104 ^o 41	751675	165159	13 19 ^m 0
7	2 18 9 ^o 37	5 ^o 023	44 5 0 ^o 4	108 ^o 74	738666	161105	13 13 ^m 2
8	2 16 1 ^o 70	5 ^o 586	44 49 28 ^o 4	113 ^o 32	725420	156988	13 7 ^m 2
9	2 13 39 ^o 73	6 ^o 909	45 35 49 ^o 7	118 ^o 15	711933	152808	13 0 ^m 8
10	2 11 1 ^o 79	6 ^o 913	46 24 10 ^o 3	123 ^o 25	698203	148561	12 54 ^m 3
11	2 8 5 ^o 94	7 ^o 701	47 14 36 ^o 7	128 ^o 61	684227	144248	12 47 ^m 4
12	2 4 49 ^o 85	8 ^o 593	48 7 14 ^o 9	134 ^o 23	670006	139865	12 40 ^m 2
13	2 1 10 ^o 87	9 ^o 604	49 2 11 ^o 3	140 ^o 09	655341	135412	12 32 ^m 6
14	1 57 5 ^o 84	10 ^o 757	49 59 31 ^o 2	146 ^o 17	640833	130884	12 24 ^m 6
15	1 52 31 ^o 00	12 ^o 080	50 59 19 ^o 4	152 ^o 42	625688	126280	12 16 ^m 2
16	1 47 21 ^o 89	13 ^o 685	52 1 38 ^o 7	158 ^o 75	610713	121899	12 7 ^m 1
17	1 41 33 ^o 18	15 ^o 371	53 6 30 ^o 2	165 ^o 08	595321	116838	11 57 ^m 4
18	1 34 58 ^o 41	17 ^o 431	54 13 51 ^o 6	171 ^o 22	579729	111994	11 47 ^m 0
19	1 27 29 ^o 79	19 ^o 843	55 23 35 ^o 8	176 ^o 97	563957	107065	11 35 ^m 7
20	1 18 57 ^o 96	22 ^o 683	56 35 29 ^o 3	181 ^o 97	548033	102048	11 23 ^m 3
21	1 9 11 ^o 51	26 ^o 038	57 49 8 ^o 5	185 ^o 79	531992	096940	11 9 ^m 8
22	0 57 57 ^o 02	29 ^o 997	59 3 57 ^o 9	187 ^o 82	515880	091789	10 54 ^m 8
23	0 44 58 ^o 39	34 ^o 679	60 19 3 ^o 4	187 ^o 16	499755	086441	10 38 ^m 2
24	0 29 57 ^o 10	40 ^o 172	61 33 6 ^o 3	182 ^o 70	483683	081043	10 19 ^m 5
25	0 12 32 ^o 93	46 ^o 526	62 44 17 ^o 8	172 ^o 98	467750	075542	9 58 ^m 7
26	23 52 25 ^o 35	53 ^o 697	63 50 8 ^o 6	156 ^o 16	452056	069935	9 35 ^m 2
27	23 29 17 ^o 91	61 ^o 447	64 47 23 ^o 1	130 ^o 29	436722	064218	9 8 ^m 9
28	23 3 2 ^o 29	69 ^o 245	65 31 59 ^o 4	93 ^o 46	421886	058386	8 39 ^m 7
29	22 33 48 ^o 02	76 ^o 224	65 59 17 ^o 0	+ 44 ^o 55	407708	052436	8 7 ^m 7
30	22 2 8 ^o 83	81 ^o 873	66 4 27 ^o 3	- 16 ^o 11	394866	046363	7 33 ^m 3
31	21 29 4 ^o 79	83 ^o 371	65 43 14 ^o 9	86 ^o 04	382053	040165	6 57 ^m 5
32	20 55 54 ^o 24	- 82 ^o 049	+ 64 52 52 ^o 2	- 160 ^o 849	3709730	033835	6 21 ^m 4

EPHEMERIS OF ENCKE'S COMET.

NOVEMBER, 1838.

At Mean Midnight at Greenwich.

Day of the Month.	At Mean Midnight at Greenwich.						Meridian Passage.
	Apparent Geocentric Right Ascension.	Var. of R. A. in 1 hour.	Apparent Geocentric Declination.	Var. of Dec. in 1 hour.	Logarithm of Distance from the		
					Earth.	Sun.	
1	20 55 54 ^{h m s} 24	-82 049	+64 52 52 ^{o ' "} 2	-160 849	3709730	023885	6 21 ^{h m} 4
2	20 23 56 67	77 630	63 32 30 6	235 86	361335	027368	5 46 1
3	19 54 15 01	71 869	61 43 29 8	303 78	353338	020761	5 12 6
4	19 27 25 39	63 185	59 28 50 7	363 47	347163	014005	4 41 7
5	19 3 41 79	55 808	56 52 37 2	412 27	342959	007098	4 13 6
6	18 42 56 08	48 636	53 59 19 9	449 58	340830	000032	3 48 4
7	18 24 52 73	42 248	50 53 31 8	475 78	340828	993802	3 25 8
8	18 9 11 57	36 732	47 39 28 9	491 71	342953	985400	3 5 6
9	17 55 28 31	32 027	44 21 3 7	498 54	347143	977821	2 47 5
10	17 43 35 93	28 065	41 1 36 5	497 65	358289	970057	2 31 1
11	17 33 6 39	24 731	37 43 55 0	490 42	361242	963100	2 16 3
12	17 23 49 35	21 925	34 30 13 6	478 23	370824	958942	2 2 7
13	17 15 34 39	19 357	31 22 14 1	462 41	361841	945374	1 50 2
14	17 8 12 11	17 549	28 21 8 7	444 05	394098	936988	1 38 6
15	17 1 23 48	15 839	25 27 45 8	424 16	407402	928175	1 27 7
16	16 55 22 39	14 375	22 42 30 9	403 53	421575	919126	1 17 6
17	16 50 4 19	13 113	20 5 34 1	382 78	436456	909332	1 8 0
18	16 45 3 87	12 017	17 36 51 6	362 36	451901	900279	0 58 9
19	16 40 26 08	11 057	15 16 10 9	342 63	467790	890468	0 50 1
20	16 36 13 31	10 210	13 3 12 3	323 31	484019	880259	0 41 3
21	16 32 18 65	9 455	10 57 32 3	306 03	500507	869971	0 33 9
22	16 28 40 39	8 775	8 58 44 3	289 38	517133	859281	0 26 2
23	16 25 18 05	8 157	7 6 21 4	273 87	533995	848280	0 18 3
24	16 22 9 70	7 588	5 19 56 0	259 31	550903	836954	0 11 7
25	16 19 14 30	7 056	3 39 0 8	246 24	567876	825295	{ 2 27 }
26	16 16 31 67	6 553	2 3 10 5	234 03	584893	813291	23 51 3
27	16 14 0 63	6 071	+ 0 32 0 0	222 33	601938	800934	23 45 1
28	16 11 41 03	5 599	0 54 53 9	212 37	619002	788219	23 39 0
29	16 9 32 65	5 132	2 17 52 3	203 18	636084	775138	23 33 1
30	16 7 35 47	4 663	3 37 17 0	194 61	653180	761693	23 27 3
31	16 5 49 63	- 4 185	- 4 53 23 6	-186 309	6702929	747886	23 21 7

EPHEMERIS OF ENCKE'S COMET.

DECEMBER, 1888.

Day of the Month.	At Mean Midnight at Greenwich.						Meridian Passage.
	Apparent Geocentric Right Ascension.	Var. of R. A. in 1 hour.	Apparent Geocentric Declination.	Var. of Dec. in 1 hour.	Logarithm of Distances from the		
					Earth.	Sun.	
1	^h 16 ^m 5 ^s 49 ^{.63}	- 4 ^{.188}	^o 4 ['] 53 ["] 25 ^{.6}	- 186 ^{.80} 9	⁰ 6702929	⁰ 747886	^h 23 ^m 21 ^{.7}
2	16 4 15 ^{.40}	3 ^{.697}	6 6 35 ^{.7}	179 ^{.68}	⁰ 687424	⁰ 783728	23 16 ^{.3}
3	16 2 53 ^{.21}	3 ^{.185}	7 17 3 ^{.3}	173 ^{.21}	⁰ 704579	⁰ 719239	23 1 ^{.1} 0
4	16 1 43 ^{.68}	2 ^{.646}	8 25 3 ^{.5}	167 ^{.33}	⁰ 721762	⁰ 704442	23 6 ^{.0}
5	16 0 47 ^{.41}	2 ^{.073}	9 30 49 ^{.5}	161 ^{.99}	⁰ 738976	⁰ 689385	23 1 ^{.2}
6	16 0. 5 ^{.41}	1 ^{.462}	10 34 33 ^{.7}	157 ^{.14}	⁰ 756221	⁰ 674127	22 56 ^{.7}
7	15 59 38 ^{.66}	0 ^{.805}	11 36 27 ^{.0}	152 ^{.72}	⁰ 773496	⁰ 658751	22 52 ^{.5}
8	15 59 28 ^{.31}	- 0 ^{.097}	12 36 39 ^{.3}	148 ^{.67}	⁰ 790797	⁰ 643363	22 48 ^{.6}
9	15 59 35 ^{.68}	+ 0 ^{.665}	13 35 18 ^{.6}	144 ^{.94}	⁰ 808113	⁰ 628104	22 44 ^{.9}
10	16 0 2 ^{.01}	1 ^{.487}	14 32 31 ^{.8}	141 ^{.46}	⁰ 825427	⁰ 613149	22 41 ^{.6}
11	16 0 48 ^{.87}	2 ^{.369}	15 28 23 ^{.7}	138 ^{.15}	⁰ 842717	⁰ 598713	22 38 ^{.6}
12	16 1 57 ^{.66}	3 ^{.311}	16 22 57 ^{.5}	134 ^{.92}	⁰ 859949	⁰ 585057	22 36 ^{.0}
13	16 3 29 ^{.74}	4 ^{.320}	17 16 14 ^{.0}	181 ^{.69}	⁰ 877085	⁰ 572467	22 33 ^{.8}
14	16 5 26 ^{.27}	5 ^{.345}	18 8 11 ^{.4}	128 ^{.33}	⁰ 894072	⁰ 561275	22 31 ^{.9}
15	16 7 48 ^{.19}	6 ^{.416}	18 58 45 ^{.8}	124 ^{.76}	⁰ 910853	⁰ 551808	22 30 ^{.6}
16	16 10 35 ^{.96}	7 ^{.497}	19 47 50 ^{.8}	120 ^{.89}	⁰ 927363	⁰ 544393	22 29 ^{.6}
17	16 13 49 ^{.55}	8 ^{.565}	20 35 18 ^{.4}	116 ^{.64}	⁰ 943533	⁰ 539309	22 29 ^{.1}
18	16 17 28 ^{.31}	9 ^{.591}	21 20 58 ^{.2}	111 ^{.95}	⁰ 959296	⁰ 536761	22 29 ^{.0}
19	16 21 31 ^{.00}	10 ^{.558}	22 4 40 ^{.2}	106 ^{.83}	⁰ 974582	⁰ 536864	22 29 ^{.2}
20	16 25 55 ^{.75}	11 ^{.435}	22 46 14 ^{.2}	101 ^{.31} 9	⁰ 989340	⁰ 539606	22 29 ^{.8}
21	16 30 40 ^{.23}	12 ^{.207}	23 25 30 ^{.9}	95 ^{.44} 0	⁰ 008528	⁰ 544876	22 30 ^{.7}
22	16 35 41 ^{.74}	12 ^{.861}	24 2 23 ^{.6}	89 ^{.32}	⁰ 017116	⁰ 552458	22 31 ^{.9}
23	16 40 57 ^{.43}	13 ^{.396}	24 36 47 ^{.1}	83 ^{.05}	⁰ 030092	⁰ 562065	22 33 ^{.3}
24	16 46 24 ^{.45}	13 ^{.813}	25 8 39 ^{.8}	76 ^{.74}	⁰ 042457	⁰ 573377	22 34 ^{.9}
25	16 52 0 ^{.03}	14 ^{.120}	25 38 1 ^{.3}	70 ^{.49}	⁰ 054226	⁰ 586058	22 36 ^{.6}
26	16 57 41 ^{.70}	14 ^{.327}	26 4 54 ^{.7}	64 ^{.37}	⁰ 065419	⁰ 599783	22 38 ^{.4}
27	17 3 ^{.27} 17	14 ^{.443}	26 29 23 ^{.7}	58 ^{.46}	⁰ 076063	⁰ 614264	22 40 ^{.2}
28	17 9 14 ^{.54}	14 ^{.490}	26 51 34 ^{.2}	52 ^{.81}	⁰ 086192	⁰ 629249	22 42 ^{.1}
29	17 15 2 ^{.14}	14 ^{.471}	27 11 32 ^{.4}	47 ^{.44}	⁰ 095838	⁰ 644526	22 43 ^{.9}
30	17 20 48 ^{.62}	14 ^{.401}	27 29 25 ^{.5}	42 ^{.35}	⁰ 105034	⁰ 659914	22 45 ^{.8}
31	17 26 32 ^{.85}	14 ^{.289}	27 43 20 ^{.7}	37 ^{.58}	⁰ 113813	⁰ 675284	22 47 ^{.5}
32	17 32 13 ^{.94}	+ 14 ^{.141}	- 27 59 25 ^{.2}	- 33 ^{.12} 0	⁰ 122206	⁰ 690532	22 49 ^{.2}

EPHEMERIS OF ENCKE'S COMET.

JANUARY, 1839.

Day of the Month.	At Mean Midnight at Greenwich.						Meridian Passage.
	Apparent Geocentric Right Ascension.	Var. of R. A. in 1 hour.	Apparent Geocentric Declination.	Var. of Dec. in 1 hour.	Logarithm of Distance from the		
					Earth.	Sun.	
1	h m s 17 32 13·98	+ 14·136	° ′ ″ - 27 59 26·0	- 32·99	0·122205	9·690531	h m 22 49·2
2	17 37 51·19	13·962	28 11 47·0	28·82	·130240	·705570	22 50·8
3	17 43 24·00	13·770	28 22 31·7	24·95	·137945	·720343	22 52·4
4	17 48 52·02	13·563	28 31 46·6	21·34	·145343	·734810	22 53·9
5	17 54 14·90	13·343	28 39 38·2	18·00	·152456	·748942	22 55·3
6	17 59 32·41	13·116	28 46 12·3	14·89	·159304	·762722	22 56·6
7	18 4 44·42	12·885	28 51 34·6	12·00	·165906	·776140	22 57·8
8	18 9 50·86	12·651	28 55 50·2	9·33	·172278	·789192	22 58·9
9	18 14 51·63	12·414	28 59 4·2	6·86	·178433	·801881	23 0·0
10	18 19 46·70	12·178	29 1 21·1	4·58	·184385	·814211	23 1·0
11	18 24 36·14	11·944	29 2 45·1	2·45	·190147	·826188	23 1·8
12	18 29 20·01	11·713	29 3 20·0	- 0·49	·195729	·837822	23 2·5
13	18 33 58·36	11·483	29 3 9·6	+ 1·34	·201141	·849123	23 3·2
14	18 38 31·26	11·260	29 2 17·0	3·02	·206393	·860101	23 3·7
15	18 42 58·80	11·039	29 0 45·6	4·58	·211491	·870767	23 4·2
16	18 47 21·08	10·822	28 58 38·2	6·02	·216444	·881134	23 4·6
17	18 51 38·21	10·610	28 55 57·4	7·36	·221258	·891211	23 4·9
18	18 55 50·30	10·402	28 52 45·8	8·59	·225940	·901010	23 5·1
19	18 59 57·46	10·199	28 49 5·6	9·74	·230494	·910543	23 5·3
20	19 3 59·82	10·001	28 44 58·9	10·80	·234927	·919819	23 5·4
21	19 7 57·49	9·809	28 40 27·8	11·78	·239243	·928850	23 5·3
22	19 11 50·59	9·621	28 35 34·0	12·69	·243447	·937645	23 5·2
23	19 15 39·24	9·438	28 30 19·3	13·53	·247543	·946214	23 5·0
24	19 19 23·57	9·260	28 24 45·3	14·30	·251534	·954565	23 4·8
25	19 23 3·67	9·086	28 18 53·3	15·01	·255424	·962708	23 4·3
26	19 26 39·67	8·918	28 12 45·2	15·67	·259217	·970651	23 4·1
27	19 30 11·68	8·754	28 6 21·8	16·28	·262916	·978401	23 3·7
28	19 33 39·82	8·594	27 59 44·4	16·84	·266523	·985967	23 3·1
29	19 37 4·18	8·439	27 52 54·0	17·35	·270041	·993355	23 2·6
30	19 40 24·87	8·289	27 45 51·8	17·83	·273472	·000573	23 2·0
31	19 43 42·00	8·142	27 38 38·6	18·26	·276819	·007626	23 1·3
32	19 46 55·66	+ 7·999	- 27 31 15·4	+ 18·66	0·280084	0·014522	23 0·6

EPHEMERIS OF ENCKE'S COMET.

FEBRUARY, 1839.

Day of the Month.	At Mean Midnight at Greenwich.						Meridian Passage.
	Apparent Geocentric Right Ascension.	Var. of R. A. in 1 hour.	Apparent Geocentric Declination.	Var. of Dec. in 1 hour.	Logarithm of Distance from the		
					Earth.	Sun.	
1	19 46 55 ^{h m s} 66	+7 [°] 999	27 31 15 ^{° ′ ″} 4	+18 [″] 66	0 2800840	014522	23 0 ^{h m} 6
2	19 50 5 94	7 861	27 23 43 0	19 03	283269	021265	22 59 8
3	19 53 12 94	7 726	27 16 2 3	19 36	286376	027862	22 58 9
4	19 56 16 74	7 594	27 8 14 0	19 66	289406	034318	22 58 0
5	19 59 17 44	7 467	27 0 18 7	19 94	292361	040638	22 57 1
6	20 2 15 11	7 342	26 52 17 1	20 18	295243	046827	22 56 1
7	20 5 9 84	7 221	26 44 9 9	20 41	298053	052891	22 55 0
8	20 8 1 69	7 102	26 35 57 5	20 61	300793	058832	22 53 9
9	20 10 50 74	6 987	26 27 40 6	20 79	303464	064654	22 52 8
10	20 13 37 05	6 875	26 19 19 6	20 95	306068	070363	22 51 6
11	20 16 20 71	6 765	26 10 55 2	21 08	308605	075962	22 50 4
12	20 19 1 75	6 657	26 2 27 6	21 20	311077	081455	22 49 1
13	20 21 40 24	6 552	25 53 57 4	21 31	313486	086845	22 47 8
14	20 24 16 24	6 450	25 45 24 8	21 40	315831	092186	22 46 4
15	20 26 49 82	6 350	25 36 50 3	21 47	318114	097330	22 45 0
16	20 29 21 04	6 253	25 28 14 3	21 53	320337	102431	22 43 6
17	20 31 49 96	6 158	25 19 37 1	21 57	322501	107441	22 42 1
18	20 34 16 60	6 064	25 10 59 0	21 60	324606	112363	22 40 6
19	20 36 41 02	5 973	25 2 20 3	21 62	326653	117201	22 39 0
20	20 39 3 27	5 883	24 53 41 3	21 63	328644	121956	22 37 4
21	20 41 23 41	5 796	24 45 2 2	21 63	330579	126631	22 35 8
22	20 43 41 48	5 710	24 36 23 3	21 61	332459	131229	22 34 2
23	20 45 57 53	5 628	24 27 44 8	21 59	334285	135751	22 32 5
24	20 48 11 60	5 546	24 19 6 9	21 56	336057	140200	22 30 8
25	20 50 23 73	5 466	24 10 30 0	21 52	337777	144578	22 29 0
26	20 52 33 96	5 388	24 1 54 1	21 47	339446	148886	22 27 2
27	20 54 42 33	5 311	23 53 19 4	21 42	341063	153127	22 25 4
28	20 56 48 88	5 236	23 44 46 1	21 36	342630	157302	22 23 5
29	20 58 53 66	+5 163	23 36 14 4	+21 29	0 3441470	0161414	22 21 7

EPHEMERIS OF ENCKE'S COMET.

MARCH, 1839.

Day of the Month	At Mean Midnight at Greenwich.						Meridian Passage.
	Apparent, Geocentric Right Ascension.	Var. of R. A. in 1 hour.	Apparent Geocentric Declination.	Var. of Dec. in 1 hour.	Logarithm of Distance from the		
					Earth.	Sun.	
1	20 58 53 ^{h m s} ·66	+5 ^s ·163	—23 36 14 ^{o ′ ″} ·4	+21 ^h ·29	0·3441470	0·161414	22 21 ^{h m} ·7
2	21 0 56 ^{h m s} ·68	5 ^s ·090	23 27 44 ^{o ′ ″} ·4	21 ^h ·21	·345614	·165464	22 19 ^{h m} ·8
3	21 2 57 ^{h m s} ·98	5 ^s ·019	23 19 16 ^{o ′ ″} ·4	21 ^h ·13	·347033	·169453	22 17 ^{h m} ·9
4	21 4 57 ^{h m s} ·59	4 ^s ·950	23 10 50 ^{o ′ ″} ·4	21 ^h ·04	·348403	·173383	22 15 ^{h m} ·9
5	21 6 55 ^{h m s} ·56	4 ^s ·881	23 2 26 ^{o ′ ″} ·7	20 ^h ·94	·349726	·177256	22 13 ^{h m} ·9
6	21 8 51 ^{h m s} ·90	4 ^s ·814	22 54 5 ^{o ′ ″} ·3	20 ^h ·84	·351001	·181073	22 11 ^{h m} ·9
7	21 10 46 ^{h m s} ·64	4 ^s ·748	22 45 46 ^{o ′ ″} ·4	20 ^h ·73	·352229	·184836	22 9 ^{h m} ·9
8	21 12 39 ^{h m s} ·80	4 ^s ·683	22 37 30 ^{o ′ ″} ·2	20 ^h ·61	·353411	·188546	22 7 ^{h m} ·8
9	21 14 31 ^{h m s} ·40	4 ^s ·618	22 29 16 ^{o ′ ″} ·9	20 ^h ·50	·354547	·192204	22 5 ^{h m} ·7
10	21 16 21 ^{h m s} ·48	4 ^s ·555	22 21 6 ^{o ′ ″} ·4	20 ^h ·37	·355638	·195811	22 3 ^{h m} ·6
11	21 18 10 ^{h m s} ·05	4 ^s ·493	22 12 59 ^{o ′ ″} ·0	20 ^h ·24	·356683	·199369	22 1 ^{h m} ·5
12	21 19 57 ^{h m s} ·13	4 ^s ·431	22 4 54 ^{o ′ ″} ·7	20 ^h ·11	·357684	·202879	21 59 ^{h m} ·3
13	21 21 42 ^{h m s} ·72	4 ^s ·369	21 56 53 ^{o ′ ″} ·8	19 ^h ·97	·358640	·206342	21 57 ^{h m} ·1
14	21 23 26 ^{h m s} ·86	4 ^s ·310	21 48 56 ^{o ′ ″} ·3	19 ^h ·82	·359533	·209758	21 54 ^{h m} ·9
15	21 25 9 ^{h m s} ·58	4 ^s ·250	21 41 2 ^{o ′ ″} ·5	19 ^h ·67	·360423	·213130	21 52 ^{h m} ·7
16	21 26 50 ^{h m s} ·87	4 ^s ·191	21 33 12 ^{o ′ ″} ·3	19 ^h ·51	·361250	·216458	21 50 ^{h m} ·4
17	21 28 30 ^{h m s} ·73	4 ^s ·132	21 25 25 ^{o ′ ″} ·8	19 ^h ·36	·362034	·219743	21 48 ^{h m} ·1
18	21 30 9 ^{h m s} ·21	4 ^s ·075	21 17 43 ^{o ′ ″} ·1	19 ^h ·20	·362777	·222986	21 45 ^{h m} ·8
19	21 31 46 ^{h m s} ·33	4 ^s ·018	21 10 4 ^{o ′ ″} ·4	19 ^h ·03	·363479	·226189	21 43 ^{h m} ·5
20	21 33 22 ^{h m s} ·08	3 ^s ·961	21 2 29 ^{o ′ ″} ·8	18 ^h ·86	·364139	·229351	21 41 ^{h m} ·1
21	21 34 56 ^{h m s} ·48	3 ^s ·905	20 54 59 ^{o ′ ″} ·3	18 ^h ·68	·364759	·232474	21 38 ^{h m} ·7
22	21 36 29 ^{h m s} ·54	3 ^s ·850	20 47 33 ^{o ′ ″} ·1	18 ^h ·50	·365338	·235558	21 36 ^{h m} ·3
23	21 38 1 ^{h m s} ·29	3 ^s ·796	20 40 11 ^{o ′ ″} ·2	18 ^h ·32	·365878	·238605	21 33 ^{h m} ·9
24	21 39 31 ^{h m s} ·73	3 ^s ·742	20 32 53 ^{o ′ ″} ·7	18 ^h ·14	·366379	·241615	21 31 ^{h m} ·5
25	21 41 0 ^{h m s} ·89	3 ^s ·688	20 25 40 ^{o ′ ″} ·6	17 ^h ·95	·366840	·244589	21 29 ^{h m} ·0
26	21 42 28 ^{h m s} ·76	3 ^s ·635	20 18 32 ^{o ′ ″} ·1	17 ^h ·76	·367263	·247528	21 26 ^{h m} ·5
27	21 43 55 ^{h m s} ·36	3 ^s ·582	20 11 28 ^{o ′ ″} ·2	17 ^h ·56	·367648	·250433	21 24 ^{h m} ·0
28	21 45 20 ^{h m s} ·69	3 ^s ·530	20 4 29 ^{o ′ ″} ·1	17 ^h ·36	·367995	·253303	21 21 ^{h m} ·5
29	21 46 44 ^{h m s} ·78	3 ^s ·478	19 57 34 ^{o ′ ″} ·8	17 ^h ·16	·368304	·256140	21 19 ^{h m} ·0
30	21 48 7 ^{h m s} ·62	3 ^s ·426	19 50 45 ^{o ′ ″} ·2	16 ^h ·96	·368576	·258944	21 16 ^{h m} ·4
31	21 49 29 ^{h m s} ·23	3 ^s ·375	19 44 0 ^{o ′ ″} ·5	16 ^h ·76	·368810	·261717	21 13 ^{h m} ·8
32	21 50 49 ^{h m s} ·62	+3 ^s ·324	—19 37 20 ^{o ′ ″} ·9	+16 ^h ·54	0·3690080	0·264459	21 11 ^{h m} ·2

EPHEMERIS OF ENCKE'S COMET.

APRIL, 1839.

Day of the Month.	At Mean Midnight at Greenwich.						Meridian Passage.
	Apparent Geocentric Right Ascension.	Var. of R. A. in 1 hour.	Apparent Geocentric Declination.	Var. of Dec. in 1 hour.	Logarithm of Distance from the		
					Earth.	Sun.	
1	^h 21 ^m 50 ^s 49 ^{.62}	+ 3 ^{.384}	— 19° 37' 20 ^{.9}	+ 16 ^{.54}	0 ^{.369008}	0 ^{.264459}	^h 21 ^m 11 ^{.2}
2	21 52 8 ^{.79}	3 ^{.274}	19 30 46 ^{.5}	16 ^{.33}	^{.369170}	^{.267170}	21 8 ^{.6}
3	21 53 26 ^{.75}	3 ^{.223}	19 24 17 ^{.2}	16 ^{.11}	^{.369295}	^{.269851}	21 5 ^{.9}
4	21 54 43 ^{.50}	3 ^{.173}	19 17 53 ^{.2}	15 ^{.89}	^{.369384}	^{.272502}	21 3 ^{.3}
5	21 55 59 ^{.05}	3 ^{.123}	19 11 34 ^{.5}	15 ^{.66}	^{.369436}	^{.275124}	21 0 ^{.6}
6	21 57 13 ^{.41}	3 ^{.073}	19 5 21 ^{.3}	15 ^{.44}	^{.369453}	^{.277718}	20 57 ^{.9}
7	21 58 26 ^{.56}	3 ^{.023}	18 59 13 ^{.5}	15 ^{.21}	^{.369435}	^{.280284}	20 55 ^{.2}
8	21 59 38 ^{.50}	2 ^{.973}	18 53 11 ^{.2}	14 ^{.98}	^{.369382}	^{.282823}	20 52 ^{.4}
9	22 0 49 ^{.24}	2 ^{.923}	18 47 14 ^{.7}	14 ^{.73}	^{.369294}	^{.285335}	20 49 ^{.6}
10	22 1 58 ^{.78}	2 ^{.873}	18 41 24 ^{.2}	14 ^{.48}	^{.369172}	^{.287821}	20 46 ^{.9}
11	22 3 7 ^{.12}	2 ^{.822}	18 35 39 ^{.5}	14 ^{.24}	^{.369016}	^{.290280}	20 44 ^{.1}
12	22 4 14 ^{.25}	2 ^{.772}	18 30 0 ^{.7}	13 ^{.99}	^{.368825}	^{.292714}	20 41 ^{.3}
13	22 5 20 ^{.18}	2 ^{.722}	18 24 28 ^{.0}	13 ^{.74}	^{.368601}	^{.295123}	20 38 ^{.4}
14	22 6 24 ^{.91}	2 ^{.672}	18 19 1 ^{.4}	13 ^{.48}	^{.368344}	^{.297508}	20 35 ^{.5}
15	22 7 28 ^{.44}	2 ^{.622}	18 13 41 ^{.1}	13 ^{.21}	^{.368054}	^{.299868}	20 32 ^{.6}
16	22 8 30 ^{.75}	2 ^{.571}	18 8 27 ^{.1}	12 ^{.95}	^{.367732}	^{.302205}	20 29 ^{.7}
17	22 9 31 ^{.85}	2 ^{.520}	18 3 19 ^{.6}	12 ^{.68}	^{.367377}	^{.304518}	20 26 ^{.8}
18	22 10 31 ^{.73}	2 ^{.470}	17 58 18 ^{.6}	12 ^{.41}	^{.366991}	^{.306808}	20 23 ^{.9}
19	22 11 30 ^{.40}	2 ^{.419}	17 53 24 ^{.0}	12 ^{.14}	^{.366574}	^{.309076}	20 20 ^{.9}
20	22 12 27 ^{.85}	2 ^{.368}	17 48 36 ^{.0}	11 ^{.86}	^{.366126}	^{.311321}	20 17 ^{.9}
21	22 13 24 ^{.07}	2 ^{.317}	17 43 54 ^{.7}	11 ^{.58}	^{.365648}	^{.313545}	20 14 ^{.9}
22	22 14 19 ^{.07}	2 ^{.266}	17 39 20 ^{.3}	11 ^{.29}	^{.365140}	^{.315748}	20 11 ^{.9}
23	22 15 12 ^{.85}	2 ^{.215}	17 34 52 ^{.6}	11 ^{.01}	^{.364601}	^{.317929}	20 8 ^{.8}
24	22 16 5 ^{.40}	2 ^{.164}	17 30 31 ^{.8}	10 ^{.72}	^{.364033}	^{.320089}	20 5 ^{.8}
25	22 16 56 ^{.71}	2 ^{.112}	17 26 18 ^{.0}	10 ^{.43}	^{.363436}	^{.322229}	20 2 ^{.7}
26	22 17 46 ^{.78}	2 ^{.060}	17 22 11 ^{.3}	10 ^{.13}	^{.362810}	^{.324349}	19 59 ^{.6}
27	22 18 35 ^{.61}	2 ^{.009}	17 18 11 ^{.7}	9 ^{.83}	^{.362156}	^{.326449}	19 56 ^{.4}
28	22 19 23 ^{.20}	1 ^{.957}	17 14 19 ^{.3}	9 ^{.53}	^{.361473}	^{.328529}	19 53 ^{.3}
29	22 20 9 ^{.53}	1 ^{.904}	17 10 34 ^{.1}	9 ^{.23}	^{.360763}	^{.330590}	19 50 ^{.1}
30	22 20 54 ^{.60}	1 ^{.851}	17 6 56 ^{.2}	8 ^{.92}	^{.360025}	^{.332633}	19 46 ^{.9}
31	22 21 38 ^{.40}	+ 1 ^{.799}	— 17 3 25 ^{.9}	+ 8 ^{.60}	0 ^{.359260}	0 ^{.334657}	19 43 ^{.7}

EPHEMERIS OF ENCKE'S COMET.

MAY, 1839.

Day of the Month.	At Mean Midnight at Greenwich.						Meridian Passage.
	Apparent Geocentric Right Ascension.	Var. of R. A. in 1 hour.	Apparent Geocentric Declination.	Var. of Dec. in 1 hour.	Logarithm of Distance from the		
					Earth.	Sun.	
1	22 21 38 40	+1 799	-17 3 25 9	+8 60	0 359260	0 334657	19 43 7
2	22 22 20 93	1 745	17 0 3 2	8 29	358467	336662	19 40 5
3	22 23 2 17	1 691	16 56 48 1	7 97	357648	338649	19 37 2
4	22 23 42 12	1 637	16 53 40 6	7 65	356803	340619	19 33 9
5	22 24 20 75	1 582	16 50 41 0	7 32	355933	342571	19 30 6
6	22 24 58 06	1 527	16 47 49 4	6 99	355038	344505	19 27 3
7	22 25 34 03	1 471	16 45 5 7	6 65	354117	346423	19 24 0
8	22 26 8 67	1 415	16 42 30 1	6 31	353171	348324	19 20 6
9	22 26 41 94	1 358	16 40 2 8	5 96	352202	350209	19 17 2
10	22 27 13 84	1 300	16 37 43 8	5 62	351209	352077	19 13 8
11	22 27 44 35	1 242	16 35 33 2	5 26	350194	353929	19 10 4
12	22 28 13 46	1 184	16 33 31 1	4 91	349156	355765	19 6 9
13	22 28 41 16	1 125	16 31 37 5	4 55	348097	357586	19 3 4
14	22 29 7 45	1 065	16 29 52 6	4 19	347017	359391	18 59 9
15	22 29 32 27	1 004	16 28 16 4	3 83	345916	361181	18 56 4
16	22 29 55 65	0 944	16 26 48 9	3 46	344796	362956	18 52 9
17	22 30 17 56	0 882	16 25 30 3	3 09	343656	364716	18 49 3
18	22 30 38 00	0 820	16 24 20 6	2 71	342498	366462	18 45 7
19	22 30 56 94	0 758	16 23 20 0	2 34	341323	368193	18 42 1
20	22 31 14 38	0 695	16 22 28 5	1 96	340131	369910	18 38 5
21	22 31 30 30	0 632	16 21 46 1	1 58	338923	371613	18 34 8
22	22 31 44 70	0 568	16 21 12 7	1 20	337699	373302	18 31 1
23	22 31 57 56	0 503	16 20 48 4	0 82	336461	374977	18 27 3
24	22 32 8 86	0 438	16 20 33 5	0 43	335209	376639	18 23 6
25	22 32 18 60	0 373	16 20 27 8	+0 64	333943	378288	18 19 8
26	22 32 26 77	0 307	16 20 31 5	-0 35	332664	379924	18 16 0
27	22 32 33 34	0 240	16 20 44 6	0 74	331374	381546	18 12 2
28	22 32 38 29	0 173	16 21 7 1	1 14	330073	383156	18 8 3
29	22 32 41 62	0 105	16 21 39 2	1 54	328762	384753	18 4 5
30	22 32 43 32	+0 036	16 22 20 9	1 94	327442	386338	18 0 3
31	22 32 43 35	-0 034	16 23 12 2	2 34	326113	387910	17 56 6
32	22 32 41 70	-0 105	-16 24 13 8	-2 75	0 3	325471	17 52 6

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Day of the Month.

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Day of the Month.





